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CLINICAL LECTURES,

DELIVERED IN THE

YEARS 1765 AND 1766,

BY WILLIAM CULLEN, M. D.

LATE PROFESSOR OF THE PRACTICE OF PHYSIC IN
THE UNIVERSITY OF EDINBURGH; FIRST PHYSI-
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EDINBURGH; OF THE ROYAL SOCIETIES OF LON-
DON AND EDINBURGH; OF THE ROYAL SOCIETY
OF MEDICINE AT PARIS; &c. &c.

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PREFACE.

THE posthumous Works of the late celebrated Professor CULLEN need no encomium ; but if any part deserves more attention than the rest, it is those Clinical Lectures he read to his Pupils, as illustrations of his own practice. Composed while his mind, matured by experience, retained all its native vigour, and delivered where his doctrines were to be confirmed or confuted by actual cases, they must be invaluable. The correctness of this publication does not rest upon detached scraps, whose defects are supplied from memory, being printed from the manuscript of an eminent Physician, who attended these Lectures and took them down in short-hand. It were much to be wished that others had followed his example, as we might then have had a *complete copy of all Dr. Cullen's Clinical Lectures* : we fear such a thing does not exist ; but a diamond is not to be thrown away, because we do not possess the whole mine.

ПРАВИТЕЛЬСТВО

CLINICAL LECTURES,

DELIVERED AT EDINBURGH,

IN THE YEAR 176⁵,

By **WILLIAM CULLEN, M. D. &c. &c.**

IT will be proper to begin these Lectures with some reflections on the business here proposed. This is to teach the practice of physic by examples. To adapt these examples in the best manner to that purpose, is the object of our plan. The first question that will probably be asked, is, What is to be learnt here? To this we may answer, that a person entirely ignorant of physic will here make his first step in that

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science, which is, to become acquainted with the appearance of diseases. These, with their several symptoms, may be found in books; but it is not the general characters of these symptoms only, but their several degrees of succession, which he should get acquainted with; and these are not to be learnt at once, but acquired by observation. Some of them, indeed, may be learnt by very little experience, as to distinguish between a quick and slow pulse; but to know what is a small or full, a hard or soft pulse, frequent experience and exercise alone can teach, with the assistance of some proper guide. The same must take place in almost every other symptom, and more especially in the combination of these symptoms. This branch, therefore, cannot be learnt without seeing and making repeated observations on the appearance of diseases. The second step that he will make is, to understand the doses and exhibition of remedies. This is upon a very uncertain footing in books; and if it were explained in them in the best possible manner, could only be useful, so far as a person should compare them with their effects. This is the third step he will make, to observe what effects are produced by such remedies, abstractedly from all considerations of the disease. These

steps

steps may be made without any great previous study ; the two next appear to require some previous study, or prior acquaintance with the appearance of diseases. The first of these is, to distinguish diseases, or to know what name is to be given to a particular concourse of symptoms : the other is, to observe the effects of remedies, as adapted to such a particular concourse of symptoms. So far we may go upon an empirical plan ; and there are many whom, from their previous state of life and business, we may expect to prosecute this plan alone. It is true, that so far as physic depends on imitation, it may be learnt without any previous study ; but even empiricism is by no means matter of simple imitation. Without any theory, there must necessarily be some general principles, so far as to distinguish between different diseases, and some general rules for the method of treating them ; but the general doctrine of empiricism is not sufficient. Analogy must be frequently employed, which is the last step that a practitioner arrives at ; and to apply this with judgment and prudence, seems to require some previous acquaintance with physical writers : for this analogy, though considered as part of an empirical plan, is really a matter of reasoning, and would be equally exposed to fallacy, if it was not more confined in its objects. Hence

the best physicians have concluded, that it may be greatly assisted by an acquaintance with the animal œconomy, by a physiology founded on the anatomy and chymistry of the human body, and applied to most or all the parts of pathology. This conclusion seems well founded, though we shall not here subjoin our reasons for thinking so.

On this plan will these Lectures proceed, so as to vary much on the empirical, but always on the dogmatical plan. What the dogmatical plan requires is sufficiently obvious, viz. the whole studies that have been deemed subservient to physic; consequently, the advantages received from these Lectures will depend very much on every person's previous studies.

The method of proceeding here in every disorder will be, first, to enquire into the history of the patient before he was attacked with his disorder, in order to find out the remote causes of it. When these are ascertained, we shall make a full enumeration of the symptoms, shewing their quality and degree, observing what is peculiar in their series and succession, in what light they are to be viewed singly, but principally what judgment is to be formed from the concourse of them. After this, to understand which, only a little attention is necessary, we shall endeavour to ascertain the species of the

the disorder, or by what name it is called among physicians ; shewing how far it is to be referred to a species or a genus, and in what class it is to be ranked. On this subject it will be proper to take notice of some late attempts to reduce disorders into classes, in this way. This is not a new invention ; but was known to the ancients. Thus they always considered fevers as an order, which was divided into its genera, continual and intermittent, and these again into their species ; though perhaps they did not use these terms. This, indeed, is new, that some people have endeavoured to separate the diagnostic part entirely from the prognosis, and bring it in a distinct system by itself.

The work, however, is very difficult ; and far from being perfect, though it has been carried on so far, as Gaubius observes, that it gives hopes of being brought by repeated labours to such perfection as is sufficient for use ; but in attempting any new system in any branch of science, it is impossible not to fall into some errors. Every error then that is corrected in this as well as any other new system, is making a considerable step towards advancement. What errors we have observed in the present nosological system, we shall reserve taking notice of, till a particular application will serve to render it more useful. On this subject, Linnæus and

Vogel

Vogel may be studied with great advantage. But to return from this digression—when the species of the disorder is thus ascertained, we shall next endeavour to find what is the particular state of the body under it. This must either be learnt from the dissection of morbid bodies, which is the surest method of judging of internal diseases, and for which purpose Bonetus and Morgagni must necessarily be studied; or we must from the most cautious reasoning deduce, what is the proximate cause of the disease, and what is the particular state of the solids and fluids at that time. This is the foundation of the whole dogmatic system. If there was any system of physic universally received, or in which no errors could be found, we might suppose this proximate cause to be perfectly understood; but as there are none such, it will be necessary, sometimes, among so many different opinions to introduce our own. Where this is particular, we shall give a particular explanation, but we shall not enter into any defence of it; only premising this, that our theory shall be an induction from generally established facts. When the proximate cause is ascertained, then we shall deduce the method of cure. This must necessarily be equally theoretical with its foundation; but we shall take care to lay down no methods of cure, that are

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not founded upon our own experience, or the practice of the best physicians. At the same time the common methods of cure shall always be subjoined, in order either to explain our own, or to shew why ours differ.

The reading necessary in this branch of science must be very extensive; and if we were to lay down a plan, we must mention some hundreds of writers; but we shall only mention some few, that may properly go hand in hand with us in these our enquiries. As to the reading of the ancients, few here have either the leisure or the capacity to do it. Their opinions, and of all those who followed them as far as the middle of the last century, may be found in Sennertus or Riverius, who, it must be observed, are both Galenians. About that time, a considerable addition was made to physic by Sydenham, who is to be considered as the first modern; and his writings will be a standard as long as they are known. After him you should read the best systems of later times, and in particular, Boerhaave's, with whom, and his commentator Van Swieten, every student ought to be well acquainted; but his system, though the best, has many deficiencies in it, and even errors. These may be obviated by other systems, particularly that of Hoffman, as it directs most to the affections of the nerves. Stahl's system

system is obscure and difficult; but as far as it can be seen in Juncker's *Conspectus*, may be useful on many occasions.

A surer and more useful knowledge in particular cases may be learnt from later writers, and particularly our own countrymen; as Winteringham on epidemical diseases, Huxham on the same subject, though his situation has led him to make more observations on diseases imported from warmer climates. What relates to armies, may be learnt from Dr. Pringle, to whom we may add Dr. Donald Monro. Of practical writers, Cleghorn on the diseases of Minorca is one of the best. Hilary, on epidemical disorders, and on those of the West-Indies, is a very useful writer. Among the French, Senac, wherever he treats on the subject of practice, and Lieutaud, are to be preferred: among the Germans, Storck and de Haen.

ON NERVOUS DISORDERS, AND THE NERVOUS SYSTEM.

AS we have many patients now labouring under nervous disorders, these first call upon our attention. These, therefore, we shall now enter upon, though they are difficult to explain, either upon

upon the empirical or dogmatical plan. But however difficult it may be, we shall speak of them upon a dogmatical plan, and show on what state of the system these nervous symptoms depend; and how, in consequence of that, the method of cure is to be adapted. For those who are unacquainted with the subject, we shall subjoin what empiricism has taught: but we must first of all speak of these disorders upon a theoretical plan. What is the best method of doing this, is doubtful; and perhaps it will be only a mere loss of time; this loss however we must venture upon. Every one who is at all conversant in physic begins now at last to perceive, that the greatest part of the affections of the human system depend on the affections of the nerves. But the laws of the nervous system are very difficult to be perceived or understood; being entirely peculiar to the animal world, and not admitting of illustration from the consideration of other parts of matter. There is within us a strange mixture of the operations of the material and immaterial part, and these are liable to very great irregularities. Hence the laws of the nervous system are not even tolerably ascertained. We work on detached parts of it; but with regard either to the whole or part of it, we speak obscurely, and take shelter under general terms. Those of sympathy, spasm, &c.

are used with as little precision now as malignity, lensor, or any others employed by the old system were formerly. What however is understood of the matter may be got chiefly from the writings of Van Helmont, who was the first that attended to the nervous system, (and though wrong in his notions he has marked several of its phænomena), of Willis, Wepfort, Baglivi, Hoffman, Stahl, Haller, Gaubius, &c. But Dr. Whytt, in his late treatise, has done more than all the rest; though even he perhaps has not entirely exhausted the subject. We shall frequently quote him, very rarely differ from him, but lay matters together in such an order as will best answer our intentions of explaining particular diseases. To do this fully, would lead us to form a particular system, which neither our abilities nor our time will permit. We shall therefore select only a few especial considerations, more necessary for our particular purpose.

In the first place then we must observe, that we shall take the nervous system in the same point of view with Dr. Gaubius, who, in his 173 Par. of his *Institutiones Pathologiæ*, thus writes : “ *Cum vita in solido agit, series datur trium conditionum, irritationis puta, perceptionis, ac contractionis; quæ successionis subitissimæ inter se confluunt, ac altera alterum excitant, quanquam non*

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æquâ virtute, nec semper eâdem lege." We suppose then that in most of the phænomena of the nervous system is a series of three conditions, 1. an impression made on an organ ^{of} sense, or sentient part; 2. in consequence of this a perception created in the common origin of sense, or *commune sensorium*; 3. a motion, or contraction, excited in the moving fibres, depending upon the nerves. We call these differently from Gaubius—impression, perception, irritation. We have mentioned this passage of Gaubius, in order to point out that under these three heads all the phænomena of the nervous system, and nervous disorders, are to be considered.

There is great room for remarks on each of these heads; but as this would lead us into too long a discussion, we shall confine ourselves to the application we had in view.—Of these three conditions the first which claims our attention, is the intermediate one of perception, which is the link between the other two, and on which they depend. This is the foundation of all our internal operations, being derived from the immaterial power within us, and connected with our organized or material part.

The consideration of this immaterial power may be left out in medicine; for if contraction or irritation necessarily follows perception, and perception is an equally necessary consequence

of impression, we have no more occasion to take notice of a sentient principle in a system of physic, than if it was a mechanical cause; so we shall enquire no further into the one or the other.

Having separated these considerations, we shall next observe how far these conditions are separated from each other, or may be considered as separate. In the first place, impression doth not seem always to produce perception; or in other words, the irritation arising from impression doth not seem always to require intermediate perception. Thus we know that many impressions produce irritations, of which we are not in the least conscious; as in the case of the distension of the ventricles of the heart by the venal blood, and the contraction in consequence of it, or in the distension of the lungs &c. Much less do we perceive in inward disorders, as when some acrimony is applied to the stomach or intestines, any impressions made, or irritation produced.

Those who assert a perception or consciousness in these cases, among whom are Stahl and his followers, defend their opinion by saying that this consciousness of the impression is obliterated by habit. This is indeed true with regard to the motion of the eye, which is originally voluntary, and attended with consciousness, but afterwards

wards is carried on without any attention of ours. But whether those internal motions are on the same footing, is doubtful; especially as there seem to be many proofs to the contrary. Thus persons, who have arrived at a great length of life without ever using purgatives, on these medicines being administered to them, oftentimes are not conscious of any impression made by them on the intestines, though a great irritation is produced.

The same holds with regard to the operation of diuretics and other medicines. In the same manner we have instances of a pricked or lacerated tendon producing great irritation; as in the case of the locked jaw, without any perception of pain in the part where the impression was first made. Oftentimes too we have no proper perception in cases of such perceptions, as produce only a mere volition. Thus we have a volition to evacuate the urine out of the bladder from various causes, the impression of which we take notice of; and do not distinguish those made by distension of the bladder by urine, from the impression made by a stone or by cantharides. Another proof is, that when a muscle is cut out of the body, on touching a part of it with the point of a needle, it contracts, owing to the remaining part of the nerve. They may call this a sensibility

sibility, if they please; but it is no more than an impression, and not a perception, which takes place only in the *sensorium commune*.

Again, in the living body there are instances, in a cold fit of the ague, of so great a degree of insensibility, as for persons to have their feet seared by hot bricks without their perceiving it. In a palsy too of the extremities, blisters may be applied to them, producing inflammation, exciting motion in the neighbouring parts, &c. without their ordinary pain being perceived; because here the palsy occupies the place of the commune sensorium.

Lastly, there are a variety of impressions that have considerable effects, without being attended by perception, or at most only a perception of their effects; and of this kind are sedative impressions. Impression then is to be considered as separable from perception.

As to perception, it always depends on the impression; so that the old saying, “*nil in intellectu, quod non fuit prius in sensu*,” is very true; but it doth not exactly depend upon the nature of the impressions, nor on the organ, or sensient extremity of the nerve: but is variously modified by the different states of the *sensorium commune*, or origin of the nerves. There are many instances to prove this, but our time doth not allow us to produce any. Here reflex sensations

sations occur, independent of the idea strictly and immediately connected with the organ, reflecting the sensations of pain and pleasure with their attendants, and these much varied in the *sensorium*.

The third condition or irritation depends constantly on perception or impression; but it may be independent of perception, as fully appears from the instances above. It is indeed very probable, that irritation depends on the nervous power, and it is not a property entirely lodged in the moving fibre. Gaubius asserts that the irritation is always proportionable to the impression or perception; but we cannot readily admit this. For, 1. we can perceive these powers as distinct from each other, viz. the perception as dependent on the motion propagated from the extremities of nerves to the *sensorium commune*; and the irritation, as dependent on the motion propagated from the *sensorium commune* to the extremities of nerves. But these may be in very different conditions, so as not to be always proportionable to each other. Thus a torpor or facility of motion may be conceived to be in one or the other, which will have that effect. This is not supposition alone, but is found to be so in fact, as appears from the effects of custom and habit.

Both moralists and physicians observe that repetition, or custom, diminishes passive, and improves

proves active habits ; or, in other words, diminishes sensibility, and increases irritability. Thus a dose of opium, if continued a few days, must be increased, or it will have no effect. But any motion that is frequently excited, and often repeated, becomes more easy, and at last almost spontaneous, that is, excited by impression, which we are not conscious of. On the same principles, if an emetic is given for several days, we must diminish the doses, the irritability of the stomach being greatly increased. Sensibility and irritability are not so constantly connected, but that they may be considered as very different ; of which there are many signs. If a slight impression made on any person produces a general effect on the whole system, we should consider him as a person of extraordinary sensibility ; but if an affection of the mind occasions contraction in any particular part, that is no proof of his sensibility, but of the irritability of that part. We shall only add here, that commonly irritation is in consequence of motion propagated from the *sensorium commune* to the extremity of the nerves ; but that it may often lie in the organ itself, which may be so modified that the impression from the *sensorium commune* may have different effects.

TENSION

TENSION and LAXITY.

AS the whole human system is very complicated, so that it is impossible to judge very accurately of any one part, without understanding the whole; so it is also in the branches of it, and particularly in the nervous system. Whoever desires to be well acquainted with it, should consider it under each of the three heads mentioned above very exactly.

But here we are obliged to select one part, and to enter into the consideration of one single circumstance, viz. the tension or laxity of the whole system, or of particular parts as connected with the whole. But even this single part we shall not be able to treat upon fully; but must confine ourselves to such considerations, as more immediately suit our purpose.

In the first place then, a certain degree of tension is necessary to the oscillation of elastic fibres of all kinds; so that, unless the two extremities are fixed, and the cord running between them is more or less stretched, they will not act with proper vigour. Secondly, animal fibres are elastic, and capable of such an oscillation. This appears from the nature of their composition and mixture. No vegetable fibres are so elastic as those of animals; and whether these are

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not even as elastic as metallic substances, is not fully determined: but though they are thus elastic, it is doubted how far they are in this state in a living body. We go on then to observe in the third place, that a living animal system is a tremulous oscillatory mass of matter. Thus the oscillatory motion of other bodies has an immediate effect on it, and particularly on one of its organs, the ear, where there is a proper apparatus to transmit the tremor to the nervous system: but that the whole system is adapted to this purpose, appears from hence; that a tremulous impulse communicated to any part of it, is communicated to the whole; and if there is any deficiency in the organ of hearing, its place is supplied by this means. Of this we have a remarkable instance in Dr. Boerhaave, nephew to the celebrated Boerhaave, who, having lost his hearing, had in its place acquired an organ of hearing in every part of his body. Thus if a book fell from the table, the oscillatory motion was conveyed to his feet, which here served him as the organ of hearing. In the same manner, by laying his hand on a person's shoulder, he could distinguish every word he articulated, his hand serving here to transmit the oscillatory motion.

These instances shew that the animal system is a tremulous oscillatory mass of matter; but these

these are the manifest result of mechanical tension and oscillation, whereas there is also a tension and oscillation peculiar to the fibres of a living animal.

To consider now how far each of these prevails in the animal system; and first of all with respect to the muscular system. In these every fibre is kept in a stretched state by the weight of the parts, by the antagonist muscles, by the director muscles of Winslow, and lastly, by the detention of the hollowed masses they surround by the fluids contained in them; but besides this, every muscle is kept stretched by some other muscle, and, in some respect, by the whole system. Thus, when we attempt to move a finger, the muscle could not contract if it was not fixed by the muscle between it and the humerus, which serves here as a fixed point. Again, in the contraction of this last muscle, the scapula serves for a fixed point, as doth the trunk of the body to a muscle of the scapula; and the weight of the whole system to a muscle of the trunk. Hence it is, that in making any great effort, we make a large inspiration in order to distend and enlarge the cavity, and thereby keep the muscles tense, and give them a proper fixed point to act from. Hence too, when we want to relieve the whole system, we often make use of artificial props to particular parts.

From these circumstances it appears, that mechanical tension is necessary to the elasticity of animal fibres. This, however, is not any fixed degree; but occasionally varies, and is greatly determined by habits and custom. Hence, though nature has given us means to use a fixed point in muscular action, we do not always employ these; but get particular postures, to perform certain offices in, and by habit use them for natural ones. Hence people are said to be awkward in their actions. This particularly appears too from the effects of tools and instruments, whose weights become habitual, so that a person by long custom cannot perform the same work so well with a light instrument.

We shall only add one other instance of the effects of this tension; which is, that infants are enabled to walk more firmly by having a weight to carry, which increases the tension of their muscles.

Hitherto we have spoken only of an external stretching force: we must now speak of the internal. The fulness of the blood vessels which traverse the muscular fibres is one of the necessary means of this tension. The effects of the arterial influx are not yet sufficiently known; but it can scarcely be doubted that it has some effect this way, if we consider that the vessels every where traverse the muscular fibres, and, as they

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are more or less distended, must give a greater or less degree of tension to them. As a proof of this, considerable haemorrhages are found to weaken the whole muscular system, which must be partly at least occasioned by the blood vessels being emptied. To this must be referred what *Sanctorius* says in his 36th Aphorism—“*Pondus corporis, indit nobis, robur* ;” for it can be explained only by the fullness of the blood-vessels giving a greater tension. That the blood-vessels have this effect, appears still further from their particular method of distribution, the principal veins running parallel to the fibres, and all their branches entering them at right angles. Another proof is the effect of injections in a dead body, which causes a contraction of the muscles. It may be observed that this succeeds better by injecting from the veins than the arteries. Probably there may be some meaning in this, as well as in the order observed in the distribution of the vessels.

All these considerations prove that the fulness of the blood-vessels is one means of giving tension to the muscular system: so that the tension of the muscles has not only a mutual dependance upon each other, but also upon the sanguiferous system. This sanguiferous system has also a tension not only in the systole of the heart; but also in the diastole, and the arteries,

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are in a distended state. Thus after the heart has ceased to act, and in dead bodies, the arteries will contract in a considerable degree to expel the blood. This tension is in health pretty uniform over the whole system, and is probably so balanced, that a change in any one part must occasion a greater or less change in the whole. Both physiologists, and pathologists, have busied themselves much in considering how the impetus of the blood is increased or diminished in different parts, and perhaps more than was either necessary or useful.

Thus the doctrine of derivation and revulsion, which made so much noise about thirty years ago, goes now more and more into neglect. It is probable that the consideration of the changes of tension in different parts, which have a greater effect on the whole system, will succeed in its place. The phænomena of blood-letting will be more easily explained from this variety of tension than from the doctrine of derivation and revulsion, as was before attempted ; for it is scarcely probable, that by drawing off a quantity of blood in any particular place, any considerable change should be made in the impetus of the blood, seeing that the subtraction must be made equally from the whole. The other method of explaining it is much easier, seeing that this tension admits of a very great degree of variety, and

and that a slight variation of it will have a greater effect on the whole system. The consideration of this tension is therefore of great consequence in the sanguiferous system.

Upon the whole then another instrument of tension constantly subsists in the sanguiferous system, and this is a distended force. But both the stretching force in the muscular fibres, and the distending force in the vessels, are not together sufficient to account for the tension of the whole system: we must add to them a contracting power residing in the animal fibres, commonly called *vis contractilis insita*. In all elastic fibres the external stretching force has a relation to this contracting power. Thus, if we take vegetable fibres in a dry state, a certain force is requisite to give them a tension necessary to oscillation.

In animal fibres too, the stretching and distending forces are always relative to this *vis contractilis insita*, which we call the *tonic power* of the fibres. It depends partly on the elasticity of the fibres, but principally on a nervous fluid: that, except in a few cases, is very constantly distributed to the nerves and moving fibres of the animal system. It depends on a living state; for it disappears on death. It is in consequence of this power, that some sensibility, and particularly some irritability, is supposed to exist in the moving

moving fibres independent of the *sensorium commune*. On the state of this *tonic power*, the variety of tension chiefly depends: and as it is the most considerable cause of the tension of animal fibres, so is it the most various.

We shall not, however, enter into a particular account of it at present, but observe in general, that the tension of animal fibres depends upon a certain balance of the stretching and distending forces, and in their tonic power. How this prevails in the muscular and sanguiferous system, we shall not now consider; but go on to observe, that there are other parts of the body differing in this respect from the muscular and sanguiferous system. Such is the alimentary canal. Its motion depends indeed on the action of muscular fibres; but a very different one from the others. Here they surround a hollow cavity that is under no constant distending power; and on that account, liable to unequal and various distension. This cavity has no constant antagonist or counterpoise; so that its tension must depend chiefly on its tonic power, though in some measure on the tension of the blood vessels: but as this must greatly vary according to the different distension of the contents, the tension must also be necessarily very various. This canal has also a peculiar degree of sensibility. From this circumstance, from its being exposed

exposed to such variety of distensions, from its dependance on the tonic power, and on the state of the sanguiferous system, it must necessarily be variously irritated, and be more subject to a change of tension, than any other part of the system, except the sensorium. Nay, it is often more affected by any variety of tension, than the sensorium itself.

Such is the state of the alimentary canal *a priori*; but we shall also find in fact, that the tension of the alimentary canal, and particularly of the stomach, is connected with the various state of the tension in the rest of the system. We shall subjoin a few phænomena in proof of this. If the stomach is accustomed to any stimulus, by which we mean here not only an impression exciting motion, but one that increases the tonic power, without exciting a contraction; when this ceases to act, and its effects are gone off, a relaxation ensues, which is communicated to the whole system. Thus, if a man is accustomed to take a dram at any certain hour, when that hour returns, he feels a feebleness over the whole system. The palpitation of the heart shews the sanguiferous system to be affected, as the tremor of the muscles doth the muscular system; but by applying the usual stimulus to the stomach, all these symptoms disappear, and the tension is restored to the whole system. That this depends

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on a change of tension, fully appears from the muscular system; for these tremors may be taken off by applying an external weight, to supply the want of tension in the fibres. Thus, a person who cannot take up a small glass without excessive trembling, can manage a large bowl tolerably well: but this observation is not confined to drams, or such stimuli on the stomach; for in consequence of fasting, we find a great feebleness induced, and a sensible deficiency in point of tension over the whole system. Though we speak here only of the stomach, yet the whole alimentary canal has some such connection with the rest of the system, as appears from the effects of a collection of fæces, or any flatulency in it, whereby a distension is communicated over the whole system. Thus, a small quantity of air, accumulated and confined in any part of the alimentary canal, will produce very various feelings in every part of the system; but all those immediately disappear on an evacuation of the flatus, and more commonly by the stomach, than the other extremity of the canal.

We shall not now explain the nature of these flatulencies; but only observe, that evident spasms of the muscular system are often produced by them, and particularly in the extremities, and are relieved by this discharge of wind. All these circumstances laid together, sufficiently

shew,

shew, that the stomach and alimentary canal have a connection, in point of tension, with the whole system. The stomach in particular, as being peculiarly sensible, as being more liable to a variety of distension from its size, and consequently of irritation, has a very great communication with the tension of the system, and both influences it, and is influenced by it. This is commonly called sympathy; and as we have no distinct notion of the communication of motion between these parts, we may use the term. Thus formerly, when the nature of sounds was little understood, and a stroke upon a harpsichord was found to produce the same effect on another, if in unison with it, this was called sympathy: but it would be ridiculous to call it so now. In this case too, as we can perceive that there is a communication along a continuous body, though its parts are seemingly distant, and we do not attend to the intervening parts, other terms might more properly be used. In one case, the term sympathy may properly be applied; when, upon an impression being made, any set of nerves may be put in action, not in consequence of the sensorium itself being affected, but some particular nerves.

But to return—the communication of the stomach with the whole system, is greater than that of any other part. This doth not depend

on the sensibility of the nerves themselves, but on the tone and condition of the organ, on which they are distributed. Nor is it in consequence of a motion excited in any one part of the sensorium, but in the whole; and this may be determined to affect particular nerves, from the peculiarity of their situation and form, from habit, or from some accidental cause.

SYMPATHY.

WE have now spoken in a brief manner upon the tension and laxity of the animal system, and endeavoured to explain it by considering the tension of the muscular and sanguiferous systems. We have considered a particular part of the body, which is upon a different footing from the rest, the alimentary canal. We have shewn that the great varieties it undergoes in point of tension, are owing to its unequal distensions, from the want of constant counterpoise; in consequence of which, it is more irritable, and depends more on the tonic power, than mechanical tension. Still, however, that it has a connection with the tension of the whole system, we made apparent, from the effects of flatulency in the *primæ viæ*, and the methods taken to disperse it. This connection, we observed, was called sympathy. As long as we have no idea on what this connection depends, the term may be used; but if we can find

find out its foundation, and the means of communication, (which ought to be attempted), it will be no longer proper. Thus it would be absurd to talk of a sympathy between the pendulum of a clock, and a finger that points the time; because here we understand the means of communication between them. In the same manner here, if a sentient principle is interposed, if the motions follow not indeed by a mееhanical power, as in the clock, but by a physical necessity, all occasions for supposing occult qualities, and consequently using this term, immediately ceases. A general sympathy is now universally disclaimed: as to particular sympathies, there is still some doubt. With regard to this, the very idea of sympathy supposes two corresponding parts. If in consequence of an impression being made on any one part, and conveyed from it to the *sensorium commune*, a motion is excited in the moving powers, this motion must either be general, or determined to some particular part.

In the first case, no one thinks at all of a sympathy, as has been just said; but when a motion is excited by it in any particular part, this is commonly called sympathy: but many of these seemingly particular sympathies, are in reality general ones, and consequently not to be looked upon at all as sympathies. Dr. Whytt has, in his last treatise, destroyed the very foundation of parti-

particular sympathies, by shewing that they are not owing to any communication of particular nerves with one another, but that they come through the intervention of the *sensorium commune*. This destroys the notion of particular sympathies, and consequently of sympathies in general.

If a blush is excited at the sight of any thing indecent, this is called a sympathy between the eye and the cheek: but the idea, of which this blush is the effect, might be received by the ear, the touch, &c. So that the blush on the cheek is not owing to any particular consent between the eyes and it, and consequently is not a particular sympathy. In the same manner, fear excites some effects, which are not produced by any particular sympathy between those parts which receive the impression, and those that are irritated. The motion of particular parts, in consequence of these impressions, depends only on the intervention of the *sensorium commune*, and the particular irritability of those parts. Thus, a person, on looking from a precipice, had always a contraction of the cremaster muscles produced. This could not be owing to any consent between the eye and the cremasters, but to the irritability of these muscles, and might have been produced by the same idea excited any other way. In this view should the sympathy between the stomach and other parts of the system be considered. It is

is not owing to any communication between the nerves of these parts, but to this circumstance.

Any affection of the stomach will effect the *sensorium commune*; and this has a power of exciting a motion in those parts, not in consequence of any consent of the stomach with them, but of some particular irritability which they possess. This proposition is convertible from those other parts of the system to the stomach. We may now apply this general principle to the several consents observed between the stomach and other parts: and first of all, between it and the head. This is not any particular consent, but such as subsists between the *sensorium commune*, and every sentient part. What effect the state of the tension of the stomach has on the state of the mind, appears from hence; that when it is in due tension, the mind is possessed of vivacity, courage, clearness, and consistency of thought: when it is otherwise, the state of the mind is quite the reverse. This might most probably be best explained from the tension of the parts; but leaving this, we shall observe that the particular consent between the stomach and head is owing to this circumstance. When the sensorium is affected by this or any other organ, the effects are first felt in the parts nearest to the sensorium, as in the eyes and ears. No wonder, then, that a vertigo, affection of the eyes, &c. are gradual processes to a complete

plete *animi deliquium*. In the same manner, if an impression on the stomach has a tendency to produce convulsions, it will probably first appear in the muscles of the eyes and visage. To illustrate this by an example, if a nerve is pricked, it will sometimes produce a tetanus; or if in a less degree, a locked jaw, this part being near to the *sensorium commune*. This cannot be owing to any consent between the pricked nerve and the nerve of the jaw, because it has the same effect whatever nerve is pricked. This may be owing too, in some measure, to the number of the levator muscles there in proportion to the depressors; and in other parts too, the flexor muscles are more apt to be affected by it. On the whole, then, this is not to be looked upon as a particular consent between the head and stomach; but it is to be attributed to the stomach having a great effect upon the *sensorium commune*, and the parts of the head, as being nearest to the *sensorium commune*, being most likely to be affected by it.

Another remarkable consent is observed between the stomach and surface of the body. This is perhaps owing to the surface of the body being the largest organ of sense, having the greatest number of nerves, and these too now stripped of their covering membranes, which must make it extremely sensible. It

is therefore very likely to be affected on any affection of the *sensorium commune*. If then the stomach affects the *sensorium commune* (as it was shewn above to do in a great degree), this will affect the surface of the body, and *vice versa*: so that here too there is no particular consent between the parts, but it is to be referred to the great sensibility of each.—Another reason why the surface of the body is more liable to be affected, is, that it has a great number of blood-vessels; and these are liable to be varied by any change in the system, as being farthest from the heart. But any variation in the state of the vessels will also affect the nerves, which run over them; and these again being affected, will in like manner affect the circulation. A third reason is, that this is a part most subject to the vicissitudes of heat and cold, which will affect both the nervous and sanguiferous systems. It must therefore have a great effect on the *sensorium commune*, and, through it, on every sensible part, and particularly the stomach; for every considerable change of the blood is particularly determined, either to the surface of the body or the viscera; and these will mutually affect each other.

It is of great consequence to shew how these are mutually affected by each other. Some

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of these phænomena may perhaps occur again, in speaking on the circulation; but either in that place or this, it avails little to refer them to sympathy. It is worth while to observe in Sanctorius's Aphorisms, how greatly the state of the mind, and all the internal functions, depend on the surface of the body. Another remarkable consent of the stomach is with the extremities, not considered simply as a surface; but as the parts most remote from the heart and sensorium commune. It is easy to shew how parts may be affected in consequence of this distance; but our time doth not allow us. It particularly appears in the gout. Whether there is any peculiar morbid matter in this disorder, is not easy to determine: but it is evident that many of the phænomena attending it must be referred to the consent between the stomach and extremities, in consequence of their mutual degree of tension, and not to any translation of morbid matter. On this principle it will be easy to explain, how a dram may drive the gout from the stomach to the extremities. These are the consents of the stomach with the other parts of the system, which more particularly belong to our purpose. The alimentary canal itself was first mentioned with a view to nervous disorders; but there are other

other parts liable to be affected, which communicate their own state of tension to receive it from other parts of the system. Such are the lungs and heart: the lungs are liable to inequalities in distending powers, though not so much as the stomach; and the heart, too, though one of the most active parts of the body, has a distending power, liable to some irregularity; consequently they are both liable to various degrees of tension, which may produce various effects on themselves, and upon other parts. Thus a case is mentioned by Dr. Whytt, in his Treatise, page 216, of a nervous patient, who had a cough, in consequence of changing her posture, or of a change of heat or cold: this can only be explained from the state of tension in the lungs being affected by that in some other part. The effects of a change of posture, in particular, can be explained only from this variety of tension, and not from any circumstance in the sanguiferous system. The stomach, then, and alimentary canal, the heart, lungs, and muscular system are, with the sensorium commune, most liable to spasmodic affections, and in these parts do they generally appear. But there are some other parts, also, which have a great variety of tensions, and by that means may affect these. Such are the seminal vessels in

men. This may be said to depend on a particular irritable matter produced there; but its nature will perhaps be better explained, from the different degrees of tension in them. This opinion will be better supported by analogy, if we consider some of the particular effects of this affection, with regard to the state of the mind, and the sensation of pleasure it excites. The genitals of women have also a considerable influence this way: these are variously affected by a series of conditions they pass through, as conception, gestation, bringing forth, &c. But these affections can scarcely be accounted for from any irritable matter, but rather from the variety of tensions they are subject to. Hence there is a great difference in this respect between men and women. In men, venery is chiefly to be considered; but in the female organs, something very different is necessary to produce these changes. Thus women who indulge themselves most in venery, if they are barren, are not liable to the same disorders with those that bear children: the uterus has also a great effect this way, as being subject to periodical haemorrhages, and thereby liable to a variety of tensions, so as to influence the system very much every month. Some men too have periodical discharges, and these are liable

to the same affections as women with their menses.

Upon the whole, it appears, on a general view, that many of these affections may be explained from a general tension, every one part serving as a balance in this respect to another. We should next proceed to mention the causes, on which these changes of tension depend: but this we must be obliged to omit, for want of time, and go on to speak of nervous disorders. We shall now enter on this, as a particular subject, and one founded on facts.

In the first place, we must say what nervous disorders are, and how they are to be distinguished from others. Without entering upon the inaccuracies of other writers in this respect, we shall observe, that we speak here of such as occur most frequently in the nervous system, in opposition to the sanguiferous, and are found in the stomach and heart, lungs, or muscular system, without the sanguiferous system being considerably or permanently affected. Thus in general we call all these symptoms of short duration, nervous ones; as a transient pain of the side, without inflammation, or any obvious cause.

But to be more particular, nervous disorders are divided into four or five orders, according

to their different seats. 1. The muscular system, which is subject to paralysis, and convulsions. 2. The alimentary canal, which is subject to relaxation or loss of its tonic power. 3. The lungs. 4. The heart, to which perhaps may be referred some that seem to reside in the sensorium commune, and are reckoned the 5th order. Of all these, the alimentary canal is, for the reasons given above, the chief seat of these disorders, and in common they are in some measure confined to it. It is perhaps a better way to limit them thus by their seat and phænomena, than by their causes. The alimentary canal was said to be the chief seat of these disorders: but when it is so, they may still be transferred to the other parts, as to the muscular system, and there produce convulsions; to the lungs, where they will cause an asthmatic affection; or to the heart, and produce a palpitation there. But these are only to be considered as symptoms attending upon the disorder in its chief seat, the alimentary canal. But there is so great a variety of affections produced here, and transferred to other parts, that it is difficult to distinguish them in some cases. Hence has arisen the question, which are hysterical, and which are hypochondriacal affections? There seem to be two genera, not to be distinguished by the difference of sex they are found in, as they may occur, either in men or women, but

but by a particular concourse of symptoms. Whether this concourse of symptoms can be particularly marked out, is not well determined. Perhaps it might be as well, if both the terms were laid aside.

Hysteria, Hypochondriasis, &c.

THE first step in all practice is to distinguish the disorder, by both its general appearance and particular symptoms. By nervous disorders, then, we here mean such as occur in, or affect the nervous system, more strictly considered. The nervous system, indeed, extends to every part ; but we can distinguish it from one considerable part of the animal system—the blood-vessels, with their immediate dependencies. Though the affections of the sanguiferous system are at bottom nervous, yet by nervous disorders, here, we mean those that affect the nervous system, in opposition to the sanguiferous ; all those phænomena, too, of disorders called nervous, that are of a transitory nature, which create various fluctuating feelings, and seem not to depend on any such organic affection of the parts, as is found in the disorders of the sanguiferous system.

These things premised, we next observe, that these nervous disorders are again divided into several orders, according to the parts which

which are the chief seats of the phænomena attending them. Objections have been made to employing the seat of the disorder as a distinguishing mark of it; but these depend on the internal state, and are such as are not readily obvious. Nervous disorders, then, may be divided into five orders: 1. Such as more purely affect the sensorium commune, and appear by disturbing the intellectual functions carried on there. These may be referred to the class called, by Sauvages, *Vesania*, though they do not simply belong to it; for he includes in it some of the affections of the organ, as Haller, *allucinatio et morositas*. 2. Those which affect the muscular system. It is difficult to appoint precise limits to this order; but in general we mean such as affect the organs of voluntary motion. These then are the subjects of various spasms or convulsions. Of this kind are the *motus impotentia*, and perhaps *comata* of Sauvages. 3. Such as affect the lungs and the other organs connected with these as concerned in respiration. 4. Those that affect the heart. How far this extends to the sanguiferous system, and by what mode these are distinguished from the other affections of the hydraulic system, is not very certain; but a palpitation of the heart, and syncope, are surely, oftentimes, idiopathic. 5. Such as affect the functions of the alimentary canal. These are

are the hysterical and hypochondriacal disorders, considered either as the same, or as distinct disorders. With regard to all these, we may observe that from the communications with each other, these different orders are often complicated with one another, which is apt to breed confusion. To keep clear of this, it will be proper to consider them, as being idiopathic or sympathetic. The disorder then is to be referred to the order of that part, in which it first appears, or most permanently continues. Of these five orders, those which are most extended over the rest of the system are those of the alimentary canal.

Under the general title then of nervous disorders, we shall only speak of those, that primarily and idiopathically appear in the alimentary canal; to which also Dr. Whytt has confined himself in his treatise. Of this the symptoms are so numerous, and so diversified in their concourse and combination, that it seems necessary to divide them again into other species. Whether this ought to be admitted or not, has been matter of dispute. It should seem that our practice cannot be accurate without some further divisions, and unless we have some other distinctions, on which we may found the method of cure. There are certainly many considerable distinctions to be observed in these

various affections of the alimentary canal, which will lead to a difference in the method of cure. There is no exception indeed to this, when these symptoms are so blended, that the distinction is very difficult. To illustrate this, we may observe, that though black and white colours are so different from each other, yet they may be mixed in such proportion in greys, as to make it difficult to determine which colour prevails. It is only in those that are most remote from each other, that we can determine which class they can belong to. But if out of a hundred shades, though the twenty intermediate ones cannot be distinguished, we can find forty on each hand, in which the black or white colour prevails, it is certainly worth while to make the distinction. The application of this to these nervous disorders is too obvious to need explanation.

The nervous disorders then, in the alimentary canal, may be considered as consisting, in the first place, of two different combinations, and concourses of symptoms, as different from each other, as black and white. To make out each of these: the one is less constant, and more dependant on occasional and external causes. The external causes exciting it, are, 1. Impressions on the organs of sense, and particularly peculiar odours. 2. Sudden passions of the mind; and particularly, not so much any single

single passion, as an alternate agitation of various passions. 3. Vicissitudes in the state of the body in any respect. It occurs chiefly in young persons who are near their acmè, or have not long passed it: but it will sometimes be repeated, and continue a long time after. It chiefly prevails in sanguine constitutions, of a smooth thin skin, where the contents of the arteries are easily seen, and the complexion is consequently florid, of a somewhat lax habit, but full and plethoric, with hair commonly pale or reddish, and generally soft and lank. It prevails in persons liable or frequently subject to hæmorrhagies; and its paroxysms occur chiefly about the time of those particular eruptions. It is more frequently found in women than men, and especially those that are barren.

It is a disorder of warm climates, prevailing more in England than Scotland, more in France than Britain; and probably the analogy prevails in still warmer countries. A proof of this is, that it occurs more commonly in warm seasons than cold. Such are the subjects, and such the causes of these symptoms. The symptoms begin first with a globe or a ball in the belly, and generally in one or the other hypochondrium, occasioning some inflation there. It soon removes from thence to the other parts of the belly, and then gets into the stomach,

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causing an inflation, and perhaps vomiting there. It then commonly runs along the œsophagus to the gullet, where it remains impeding ^{digestion} respiration. Though this is an internal affection, it seems manifestly to rise in one of the flexures of the colon, and to proceed along the small intestines to the stomach, and so to the gullet. But in this progress the contiguous parts of the abdomen, &c. are often affected. Thus the abdominal muscles are violently contracted, and the navel drawn in. The heart is troubled with a palpitation; the lungs with an asthmatical fit; and when the ball is got to the gullet, a *coma* and *stupor* come on. These symptoms are of different durations, admitting of some relaxation; but they occur more or less frequently according to the disposition of the body, or on a return of some external causes: when they have once attacked a person, they are very readily excited afterwards by smaller causes. Oftentimes they come under the power of the will: so that, on recalling to mind their former affections, persons can make all these symptoms to recur.

We must observe here, that all these symptoms do not occur in every patient, nor in the same order; but we must distinguish by a number of them occurring together. These are the first combinations or concourse of symptoms

we spoke of, commonly called hysterical. Opposite to these are the symptoms which follow. This second concourse of symptoms is more constant and permanent, and subsisting in the habit with more certainty than the other. They depend less on accidents, arising more frequently from internal causes, such as weaken the tone of the system. They are often caused by the passions, but not sudden or fluctuating ones, but such as are more lasting, and particularly grief. They chiefly occur towards the decline of life, when the human system has passed its meridian, which is usually placed at 35. The temperature of constitution it most prevails in is that known by the name of melancholy; where persons are of a less fine and smooth skin, and of a thicker texture; discovering the veins more than arteries, and consequently being of a leaden or livid, rather than a florid cast. Their body is usually lean, and their hair black and crisp. They are liable to a fulness, apparent in their veins, and are subject to haemorrhagies. Oftentimes they suffer obstructions, particularly of a determination to the surface of the body at the extremities.

These symptoms occur more frequently in men than women; though this is not so certain, as that the others occur oftener in women than men. Oftentimes they are attended with

an irregular appetite, sometimes loathing, and sometimes craving, for a peculiar aliment: as also with indigestion, and this generally owing to a tendency to acidity. These are frequently accompanied with the sensation of clear water on the stomach called here *water brash*, and **Ptyalism.** **hypocon.** by **Sauvages**: and this is generally attended with a pain of the stomach, perhaps the heart-burn. With these, frequently occur flatulencies in the stomach and intestines, and other parts of the abdomen, like a distension or spasm, but of a more durable nature. There is also an habitual costiveness, which is not common in the other symptoms. This is a disorder of cold climates, and occurs most in cold seasons, the patient being generally relieved at the approach of summer. These two concourses of symptoms are to be distinguished oft times by the peculiar tone or state of the mind. In the first or hysterical, a remarkable mutability of passions occurs, so that the patient will laugh, cry, and undergo all the vicissitudes of passions in a minute. In these last, commonly called **hypochondriacal**, a more constant dejection prevails.

These disorders have been thus distinguished by most physicians, and particularly those of the sixteenth and seventeenth centuries. We may now have a notion of two very different, nay even

even opposite conditions of the human body. But we must go still further for practice, and divide these into their several species.

The hysterical disorders then may be divided as follows.

1. *Hysteria plethorica simplex.*
2. *Hyft. plethorica a mensibus retentis vel suppressis.*
3. *Hyft. libidinosa.*
4. *Hyft. fæminarum sterilium.*
5. *Hyft. chlorotica.*
6. *Hyft. ab inanitione.* This may proceed from spontaneous natural hæmorrhagies, or from too great a discharge of the lochia, or a fluor albus. The hypochondria may also be thus divided:

1. *Hypochondriasis congenita.*
2. *Hyp. a pathemate.*
3. *Hyp. a studio nimio.*
4. *Hyp. a venere nimiâ.*
5. *Hyp. ab inanitione.*
6. *Hyp. hysterica.*
7. *Hyp. empractica.*
8. *Hyp. a suppressis evacuationibus quibusdam.*
9. *Hyp. a repulsis.*
10. *Hyp. a febre intermittente interruptâ.*
11. *Hyp. arthritica.*
12. *Hyp. nephritica.*

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We shall now proceed to give a few marks, by which these several species may be distinguished from each other. The first mentioned is the *hysteria plethorica*: this entirely depends on the constitution described under the general name of hysterical, such as are sanguine and plethoric, exclusive of any disorder in any particular part. This, then, is the principal foundation of the proper hysterical disorder. Oftentimes by means of this general predisposing cause of disease, occasional causes, such as an agitation of the passions, &c. will bring on the hysterical symptoms, at the same time that the menstrual flux is perfectly regular. This shews the error of those who have made the uterus the only seat of hysterical diseases.

The second species is the *hysteria a mensibus retentis aut suppressis*. Whether this should be confined to the menses alone, or extended to the haemorrhagies, is not easy to determine. Perhaps whatever determines to a plethora, universal, or partial, (though a particular one is now exploded), may be the cause of this; but as it occurs most frequently in the case of the menses, it is particularly distinguished by that name.

Under this head, perhaps, should have been placed, what is mentioned as a distinct species, the *hysteria chlorotica*. This commonly, too, depends on a retention, and sometimes on a suppression

pression of the menses : yet we must distinguish between these, as they seem to have very different effects. In the one appear the symptoms of a plethoric state ; the countenance retains its colour, and the alimentary canal and stomach exercise their functions : but in the other, a manifest weakness appears in the whole system ; the stomach is affected with all the hysterical symptoms ; the quantity of red blood is greatly diminished, the serum abounds, and is apt to form anasarca. Between these two are all the intermediate stages of the plethoric state, which are only to be distinguished by their different degrees. Though they both arise from the same cause, they require a very different management, and are easy to be distinguished from each other.

The next species that occurs is the *hysteria libidinosa*. It is a remark of long standing, that the hysterical paroxysm commonly is terminated by a flow from the pudenda. In Sauvages, under this title, is mentioned the case of a nun, who was cured of this disorder, *a titillatione clitoridis a barbi tonsore impudico instituta*. Some words of Astruc are also to be referred to this, obscurely hinting at some means employed by women in France, to relieve themselves when in this state.

We do not observe this disorder here, though it frequently happens in more southern climates.

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There is no doubt, but that this depends on falacity, since it will even produce a *furor uterinus*. But though this is frequently the case, it is not always to be imputed to a want of venery; for we often find women who have indulged themselves greatly in venery, affected with these paroxysms. Nay, perhaps this very indulgence is the cause of it, as it will give an irritability to the whole system, and by that means often renew the paroxysms. The *hysteria libidinosa*, therefore, is perhaps of two kinds, one proceeding from a *want*, and the other from an *excess of venery*; but this more commonly ends in hypochondriacal complaints, as shall be shewn upon that subject.

The next species is the *hysteria feminarum sterilium*. In unmarried women we may be at a loss, perhaps, whether the disorder is to be referred to this, or the last species; but in women that are married, and have no children, we may generally suspect this to be the case: whether sterility makes the *venereal appetite stronger*, or this last causes sterility, it is very different from the *hysteria libidinosa*, though frequently combined with it. All these species may be referred to the general head of *hysteria plethorica*. The next which follows the *hysteria ab inanitione*, is directly opposite to these. This often proceeds from *hæmorrhagies*; and some women cannot loose

loose more than four ounces of blood without being thrown into an epileptic, or hysterical paroxysm. Frequent evacuations, continued for a long time, will dispose to hysterical disorders. This shews why they often happen to persons liable to great menstrual discharges. Child-bearing women are also subject to them, from too great discharge of the lochia.

It is proper in delivery to swathe the mother with bandages, to keep up the tension occasioned by the bulk of the uterus and its vessels, and to prevent too sudden a relaxation.

M. Sauvages has added another species to this, *hysteria a leucorrhæa*. So far as too great an hæmorrhoidal flux may be connected with a *fluor albus*, this may happen; but a *fluor albus* alone never produces hysterical disorders, but more commonly terminates in the hypochondriasis. He has also added another, *hysteria verminosa*. It seems very probable that an irritation from worms may produce hysterical disorders; but no instances of it have occurred to us. After having gone through the several species of hysterical disorders, we come next to the hypochondriacal. The first of these is, the *hypochondriasis congenita*; the propriety of this term is rather doubtful, and the disorder is called by Sauvages, *hypochondriasis melancholica*. This depends on the state of the whole system, as the *hysteria pectoralis* did, and

not on any partial affection, or external cause. Persons of the melancholie temperament, as already described, are very subject to it, especially towards the decline of life. It is also distinguished by other marks, as that it affects the mind more than the body, and that the affections of the alimentary canal are not so conspicuous here. In most of the other species, too, the disorder is more constant; but here it has several intervals, sometimes of years, though its periods are very long when it happens.

The second species is the *hypochondriasis a pathemate*, proceeding generally from grief, or some other strong agitation. This doth not so much differ from the *hypochondriasis congenita*, as some of the other species do, being generally found in the proper melancholie constitution: and indeed no other constitution is so tenacious of passion. But it may be produced in any constitution, by much grief, when a person has been long exposed to a series of misfortunes.

The third species, or *hypochondriasis a studi nimo*, is something of the same kind. Nothing affects the alimentary canal more than much study; by which we mean an intense application of the mind, not to literature only, but to any business or employment. This happens more frequently in persons of a melancholie constitution, because they are capable of most

attention, and are particularly found to direct their attention to some particular object. But it is very certain, that a great degree of application, with some anxiety accompanying it, will produce it in any constitution. The fourth species mentioned is, the *hypochondriasis a venere nimis*. This differs from the other species, since it doth not occur most frequently in the hypochondriac constitution. We may make a general distinction, then, between those species that occur in a proper hypochondriac constitution, and those that do not. There are scarcely any instances of venereal impotency occurring in a proper hypochondriacal constitution, most of them being in the sanguine. The constitution, therefore, doth not occasion this venereal impotency, but the impotency brings on the hypochondriac paroxysms. This is often attended with much dejection, and other hypochondriac systems, such as occur in those commonly called *maladies imaginaires*. Many of these, too, may be referred to this very species; but we must distinguish between them in general, because they require very different methods of cure. The next species is, the *hypochondriasis ab inanitione*. Any evacuations that are considerable will be apt to bring on hypochondriac disorders, by destroying the tension of the system, in consequence of which, the alimentary canal is equally first affected. These

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evacuations may be very different; one of them proceeding from the alimentary canal itself, the diarrhœa or dysentery may occasion these symptoms. Whether the *diabetes* is a cause or a symptom of these disorders, is not easy to determine. Oftentimes a large and unusual flow of urine happens in hysterical and hypochondriacal disorders; and this again, being continued for a time, may renew the paroxysm; so that perhaps this may deserve to be looked upon as a cause producing a species of hypochondriac disorders; but evacuations of blood are a more frequent cause than any other; and when they are slow, they more commonly produce hypochondriac disorders than hysterical. Thus it has been observed, that women who are liable to hæmorrhoidal fluxes, are more subject to hypochondriac disorders than hysterical. It is the same with regard to the *fluor albus*: most of these disorders *ab inanitione*, frequently attend hysterical constitutions, but they may be distinguished by their different symptoms. The sixth species is the *hypochondriasis hysterica*: this is an affection of the alimentary canal, brought on by a frequent concourse of hysterical symptoms. These diseases attack at various times of life; the hysterical generally prevailing from fifteen to twenty-five years of age; and when these go off, the hypochondriac succeeding, in consequence of an affection of the alimentary

alimentary canal. This species being a kind of a mixture between the two diseases, as grey colour is between black and white, it is difficult to determine which class it is to be referred to. The next species is the *hypochondriasis emphatica*, arising from obstructions in the viscera. It is difficult to assign any external marks here, as they appear oftentimes from dissection only; and here it is hard to say, whether they be the causes or the effects of the disorder. However, where we discover that there is an accumulation of the blood, and in consequence of that an obstruction, which may be perceived by the hardness and bulk of some of the abdominal viscera; and where these are attended with hypochondriac symptoms, we may determine it to belong to this class. It is necessary to make this a distinct species, because it requires a different method of cure from the others. The eighth species is the *hypochondriasis a suppressis evacuationibus quibusunque*. This may be occasioned by the sudden suppression of any evacuation to which the body has for any time been liable: as for instance, of diarrhœa or dysentery; but more frequently it proceeds from the suppression of evacuations of blood, as of the menses or hæmorrhoidal flux. A suppression of the menses more frequently produces hypochondriac than hysterical symptoms, except in a case of a sudden suppression in young women,

women, which usually occasions hysterical; but when obstructions come on more gradually, they produce hypochondriac, or perhaps a true chlorosis. There is no doubt but a suppression of the haemorrhoidal flux in men, is commonly attended with hypochondriac symptoms. It may be questioned, whether these hypochondriac disorders arise from obstructions solely in this case, or from the tension of the system being altered by these obstructions. The next species is distinguished by the name of *hypochondriasis a repulsi evacuationibus quibuscunque*. This may be occasioned by any eruption of the surface of the body being driven inwards, or by the sudden drying up of an issue, ulcer, &c. all which will produce hypochondriac symptoms. To this we may add the tenth species, or *hypochondriasis a febre intermittente interrupta*. Several physicians have supposed that intermittent fevers have a limited period of time, and that, by stopping them before the proper number of days is expired, bad symptoms will be produced. The truth of this has not been determined. We have seen instances of persons subject to intermittent fevers, who, on these being prevented from having their ordinary course of medicines, or from cold, have been troubled with hypochondriac symptoms; it therefore seems very probable. The two last species are *hypochondriasis arthritica et nephritica.*

nephritica. It is well known that the gout, though appearing in the extremities, has a great consent with the alimentary canal, and is generally produced by some affection of it. Accordingly many persons know when the gouty fit is coming on, by the hypochondriac symptoms preceding it. How far this proceeds, and in what manner it is produced, is not determined. In the same manner, we have seen many instances of nephritic patients, who could foretell the approach of the fit by symptoms in the stomach, and were relieved at once from these symptoms, by the return of the nephritic fit. How the affections of the kidney are thus communicated to the stomach, we cannot say: but if we consider that the arthritic and nephritic symptoms are often combined, we may conclude that their manner of affecting the stomach and alimentary canal is the same. There are probably other affections of the system that may affect the alimentary canal with proper hypochondriac symptoms: but these seem to be most remarkable. All other writers, though they have not thus divided these disorders into so many distinct species, have done the same thing more or less, in effect, in making them to proceed from so many external causes.

METHOD OF CURE.

AFTER giving a general view of the ~~nephritic~~ and hypochondriac disorders, and pointing out the several species of them, we are next to lay down a method of cure for them. According to the plan we laid down at first of treating all disorders in a dogmatic way, we should now mention the proximate causes of these diseases. This would lead us into too long a discussion, if we were to do it at large: we must therefore be content with a few strictures upon the subject. The proximate cause of these disorders is to be learnt from the consideration of the two temperaments, which are the foundation of each. In the sanguine (for so we may now call it), or hysterick constitution, there is a lax fibre. Whether this proceeds from the laxity of single fibres, or from a general weakness of the tonic power, we shall not here determine. This gives occasion to a more easy distension of the arterial system; and the contraction not being proportionate to this, an accumulation ensues, which gives rise to the plethoric state of the arterial system.

The state of tension depends partly on the distending fluid, and partly on the contraction of the vessels. These, then, being now constantly

stantly stimulated, occasion a greater degree of irritability, and, like a machine moving on friction wheels, acquire a remarkable mobility, and dispose the body to be affected by the smallest change in the tension of the system, even in particular parts. The nature of this temperament then consists in mobility. Whether this mobility depends on irritability alone, or also upon an increased sensibility, we shall not enquire at present. The mobility disposes the constitution to an ataxia of nervous symptoms. Accordingly Sydenham observes, that all the symptoms of the hysterick, and most of the hypochondriac diseases, depend on this ataxia, the nervous fluid flowing in too small a quantity, or with too little force to some parts, and too much to others. Sydenham's observation is very just; but still this doth not reach to the proximate cause. This irregular motion in such constitutions may be produced either by a stimulus, or by relaxation, that is, a want of the usual stimulus, arising from a proper degree of tension.

The effects of stimulus in producing a more copious influx, or a greater impetus, may easily be understood: but to understand the effects of relaxation in this respect, we must consider what happens in every *deliquium animi*. Here is a suspension of the nervous power into the vital organs, affecting the whole system, and attended

with convulsive symptoms. These spasms and convulsions, in other cases, as well as this, are often occasioned by a want of tension. That this is the case in the cramp, appears from persons being liable to it in certain postures. We also find it to be cured by restoring the tension; as by getting out of bed, and resting on one's feet, or by pressing with the feet against a board placed across the bottom of the bed. Hence relaxation, or an absence of tension, appears to produce an irregular influx of the nervous power. The disorder thus depending on mobility, and consequently on the ataxia produced by these various causes, may easily extend itself to every part of the nervous system. This is the nature of the hysterical disorder, and the foundation of its symptoms.

In the hypochondriacal disorder, depending on the melancholic temperament, is a rigid fibre, which gives a strong contractile force to the arteries, and consequently a better counterpoise to the distending blood. But, by this means, more blood is thrown into the venous system, which occasions a venous plethora. As this occasions a slower motion, it must affect the action in the origin of the nerves; and if we may easily conceive that, when the motions are thus different to excess, the prime mover in the origin of the nerves being weakened, must produce a torpor.

torpor. But as the tonic power is here diminished, as well as the irritability, the alimentary canal will most commonly be affected by it, as it more particularly depends on the state of the tonic power. But, independent of the general temperament of the system, this torpor of the alimentary canal may be induced by any weakening causes.

There appears then to be a foundation for two species of hypochondriac disorders; one depending on the general temperament; the other, on external causes.

We have thus given a general idea of the different states of the body in these disorders, and shewn that the hysterick depends on an excess of mobility; the hypochondriac, on too great a torpor. There appears then to be a foundation for the distinction between them in theory as well as in fact. Hitherto we have supposed them both to communicate with the whole system; but they may also both depend on a peculiar state of the nervous system, independent of the sanguiferous. Hence proceeds the great power of the imagination, so remarkable in both of them, particularly the hysterick.

Among the many causes that may induce this change in the nervous system, one is a peculiar acrimony, introduced into the body, and particularly affecting the nerves. An instance of this

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we have in poisons, many of which produce a particular mobility and sensibility in the nervous system. We may suppose a variety of other acrimonies; but this is for the most part purely hypothetical, and we draw our conclusions solely from the events, as from some evacuation, eruption on the surface of the body, &c. Nay, where we are certain of the facts, as in the case of poisons, our remedies are not directed to expel or carry off the acrimony. So much for the proximate cause of the disorders. To this may be subjoined a *ratio symptomatum*, which would also serve as an explanation of the doctrine here laid down: but this would lead us into too long a discussion. Omitting these therefore, we shall proceed now to speak of the method of cure.

As the two disorders have been marked out as exactly opposite to each other, we must necessarily speak of them separately here; and first of hysterick. Here the method of cure depends on removing the paroxysm when present, and in the intervals endeavouring to prevent its return. We must endeavour to remove the paroxysm, both because in certain cases it may prove fatal and also that, independent of immediate dangers, it considerably affects the constitution, giving a habit and a foundation for a repetition of the fits.

In taking off the paroxysm, we have in view
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the diminution of the plethoric state, which is the foundation of it. Bleeding therefore is frequently thought of: but the use of it requires a nice judgment, to determine how far the plethoric state prevails, and what is the peculiar state of the patient's constitution. In the first fits it is necessary and safe, especially in manifestly full and plethoric habits, unless we can discern the disorder to have arisen rather from inanition, than repletion. But in this case, as also in the case of repeated fits, it is generally hurtful; since all evacuations increase the mobility of the system, on which the disorder depends. It should therefore be used with caution; and in most cases, it should rather be avoided than practised. Another means of removing the paroxysm is taken from considering the disorder as it turns out in effect, producing a comatose state. Hence stimuli were thought of, the most powerful and most immediately applicable, of which are heat and cold.

Doctor Whytt has shewn the good effects of heat, especially when applied in the shape of bathing. The pediluvium which he recommends, is in many cases extremely serviceable, but in others entirely ineffectual. Thus it is of less use in remarkably plethoric habits, and we may add too, of less safety, as stimuli tend here to rarify the blood. But in less plethoric habits,

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and where the disorder seems to have arisen from inanition, particularly where it doth not come on from any sudden agitation of passion, but arises from some more obvious cause, beginning perhaps with cold at the extremities, and ascending upwards; in these cases pediluvium is very serviceable. We speak here of an hysterical paroxysm of the limbs. In giving a general tension to the whole system too, by applying a stimulus to particular parts, heat has considerable effects, and the pediluvium is of greater service, than a fatus. Another very efficacious power, and very soon applicable, is that of cold. This has a very great effect in preventing the return of the fit, when applied in the interval; but during the paroxysm, its effects are more ambiguous. If we could apply it to the whole system at once, whilst the spasms continued, it might be very serviceable; but as we can apply it only to particular parts, whilst it diminishes the nervous impetus in some parts, it increases it in others, which increases the paroxysm. Immersing the hands in cold water, or sprinkling some upon the face, just before the fit, is sometimes found to prevent it, sometimes to bring it on faster. But when the fits come to the comatose state, this is one means of recovering the patient sooner.

Another set of stimuli is found in medicine. Whether these are to be considered merely as stimuli,

stimuli, or also as antispasmodics, we shall not here determine. At least they are of a peculiar kind, and all stimuli are not equally useful. Those are generally used that are most active, as volatile alkali; and this applies to an organ that most readily communicates with the whole system, namely, the smell; for in the hysterick paroxysm we cannot introduce any thing by the mouth and stomach. This seems to act merely as a stimulus. But in empyreumatics, as in burnt animal substances, there is a mixture of qualities, there being both a volatile alkali, and empyreumatic oil; and whether these act as a stimulus only, or also as antispasmodics, is not certain.

Analogous to these empyreumatics are, the fossil oils. The oleum succini is most usually employed of these: but that met with in the shops is in general very ineffectual, being never pure or genuine, but consisting chiefly of the oil of turpentine. The oil of amber, when in its properly-rectified state, is a very powerful medicine. Besides applying these medicines to the nose, we may also introduce them by a glyster: though the sphincter ani is sometimes so much contracted, as not to allow us to proceed that way, they are found to be more powerful than any fatus. These are the methods used to remove the hysterick paroxysms.

As to the proper means to be employed during the intervals, to prevent the return, these depend on these two points, avoiding occasional causes, and correcting the predisposition. To consider these fully, we must observe the several species of hysterical disorders, and on what foundation they depend. In all these, except the first, the method of cure must depend on the consideration of the particular cause which gives rise to them; and therefore a particular method must be observed in each. We shall first of all insist on a more general method of cure, independent of any particular affection; but when the disorder arises from occasional causes, the first thing to be considered, is to avoid the occasional causes. This is sometimes very difficult, as the passions are the chief of these occasional causes. Thus, if an excess in venery is the occasional cause, we can but seldom know this, or prevent a repetition of it. It is the same in the case of the other passions. A sagacious physician may however frequently discover these, and often be able to give the patient proper directions how to avoid them. But his proper business is to correct the predisposing cause, and enable it to resist occasional causes. This predisposing cause often depends on the plethoric state of the system. We think we may obviate this by evacuations, and accordingly blood-letting.

letting is a very general practice: its use, however, is very precarious in curing this plethoric state; for sometimes, instead of preventing the recurring of it, it will even induce and increase it. It requires, therefore, a very nice attention to judge what quantity of blood may be taken away, when the quantity will be recovered again, and whether it may be repeated, before the quantity is recovered, always diminishing it each time. This has been mentioned by other practitioners; but it should be attended to in particular with this view, that if we produce an inanition, we do as much harm in inducing the disease, as the plethoric state did before. Accordingly this disorder is sometimes produced by too copious blood-lettings. Thus in a particular case, a plethoric young woman had her menses stopped by taking cold, and finding a distension to arise from this circumstance, was bled three or four times by her own directions; in consequence of which she was attacked with a severe hysterical disorder, which still continues. Venæsection, therefore, is very dangerous, either as it may increase the plethora, or introduce inanition, and is only to be used in recent cases, and where there is manifestly a full habit. Indeed we would never recommend the obviating a plethoric habit by this, but rather by low diet, and exercise. But here a difficulty occurs,

owing to a want of distinction between the proper hysterical disorder, and the same, when afterwards changed to hypochondriacal by time. Thus there are many hysterical patients who cannot bear a low diet.

A distinction therefore is to be made with regard to the diet proper for hysterical patients. One kind should be adapted to the general system, being small in quantity, and consisting chiefly of the vegetable diet. This is suitable to the proper hysterical disorder. In the other, the diet should be particularly adapted to the alimentary canal. Thus, if a person has been accustomed to live upon meats and wine, it would probably bring on the hysterical disorder to abstract this suddenly, or to throw in acescents. But when this necessary distinction is observed, low diet is very useful, and there are several instances of hysterical disorders being cured by it. Accordingly, we frequently find these patients to have a craving for vegetable acescent diet only. In one case, a young woman lived on apples alone for some weeks, and, by this abstinence of cooling diet, was more free from paroxysms than by taking any thing more stimulating and filling. But as the disorder approaches more towards the hypochondriac state, and when the alimentary canal is subject to flatulencies, &c. this is less proper.

Another

Another method of preventing the return of the paroxysm, is by diminishing the mobility of the system. This may be effected by various means; one of which is, a proper management of the passions. These have a very different effect; some acting as stimuli, others as diminishing the nervous power. Of these last, called *pathemata reprimientia*, is fear. But this has an ambiguous effect; and frequently, when the sensibility and irritability are much increased, fear will bring on this disorder. As it is hard, then, to determine whether it will have a repressing effect, or will incite to action in order to repel the object, we can but rarely apply these *pathemata reprimientia*. But when this fear is brought on less suddenly, and made to excite an apprehension that is permanent, and regards some future rather than present evil, it has an extraordinary effect in epileptic and hysterical cases.—The remarkable case of the epilepsy, at Haerlem, is known by every one.

A permanent grief and anxiety also, which so often excites hypochondriac disorders, will frequently cure hysterics. Thus, in the year 1745, whilst the people laboured under constant anxiety about the Rebellion, many nervous patients were observed in Scotland to remain remarkably free from their usual complaints. Persons too who have been long subject to nervous disorders, have often, by some great mis-
fortunes,

fortunes, had these disorders allayed for a considerable time.

Another means of diminishing the mobility of the system, is, by the application of cold to the body. Its manner of operating is difficult to explain. It might be thought to act on an animal body, as it doth on other matters, by contracting their substance, and so increasing the firmness of the single fibres. But cold, applied to the whole surface, doth not, by its condensing power, reach to any considerable depth; so that its efficacy must depend on something else. We find the cold to act as a remarkable stimulus on the system. Thus, if a man's hands are immersed in snow, as soon as they are taken out, they become glowing and very red, there being a great influx of arterial blood into them. In this way, then, it may serve to increase the tonic power, and, by that means, obviate this mobility. But, independent of its stimulating power, it may merely, by inducing a contraction, increase the tonic power, and so extend its influence over the whole system, in some measure. Perhaps, too, it may act in diminishing the mobility. This seems very probable; for, when carried to a certain length, it will destroy mobility entirely. In support of this, we find, that proper hysterick diseases, depending on this mobility, are more seldom met with in cold countries. Accordingly, instead of the cold bath,

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living in a cold air is a better method to obviate these disorders ; the air here acting as a permanent cold. Perhaps the cold bath is serviceable on this account ; not by a few immersions, by retaining the patient for several hours in the cold. This seems to be pursued by Mons. Pomma, who has given an exact detail of the effects of the cold bath, in his treatise *Sur les Affections Vapoureuses du Sexe*. He seems to be very forward, and treats all other practitioners with great contempt, which favours of empiricism. His theory is very futile and frivolous, and his reasoning absurd. But he gives us a set of facts, very particularly described as to circumstances ; so that we must trust to the veracity of them. His method of cure is chiefly by the effects of the cold bath. But some of these are difficult to conceive ; for he tells us of patients being kept in it for twenty hours together.

WE have now shewn the two general indications of these hysterical disorders to be shortening or relieving the paroxysms, and preventing the return of it. To produce the first of these effects, we have mentioned a discreet use of bleeding, pediluvium, the application of heat and cold, and antispasmodic medicines,

medicines, as of great service. The latter we shewed to turn on these two points, avoiding occasional causes, and correcting the predisposition of the habit. With regard to this last, we took notice only of the plethoric habit; though we ought to have observed, that the disorder depends on inanition sometimes, as well as repletion: this observation is too often overlooked, and deserves to be attended to. Thus, if there are instances of epilepsies being cured by milk diet, and of the same being applied with success in hysterick cases, there are also known to be hysterick cases cured by the patient's using a fuller diet than before. In correcting the predisposition, we affect either the sanguiferous or nervous system; that is, either endeavour to diminish the mobility, or to increase the tonic power of the system. These have been looked upon as the same effect; but they are to be considered as different.

Thus the first remedy mentioned, viz. the impression of fear or any other analogous passion, may be supposed to diminish the mobility of the system, but cannot be easily explained as increasing the tonic power. The second remedy proposed, the application of cold, may be supposed both to increase the tonic power, and perhaps to act in a way analogous to fear, by diminishing the mobility.

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We must now proceed to speak of the various medicines used in this disorder, to correct the predisposing habit. These are commonly considered as increasing the tonic power, and thereby diminishing the mobility of the system; but the same doubt arises with regard to many of these, as was just mentioned concerning the effect of cold. The first of these medicines we shall mention, are various metallic matters, particularly chalybeats: these are found under many different forms of preparations; but all these differ little in their power. Their use is very uncertain at present; and perhaps they are absolutely improper in an hysteria plethorica; or, if they are administered, should be given sparingly, and in small quantities; but they are highly serviceable in the chlorotic state, under that general flaccidity attending that state: and here, contrary to the general rule of giving chalybeats in small quantities, and diminishing the dose, they are to be given in larger doses, which has been attended with great success. Chalybeate waters, indeed, may be employed with more safety and success in small doses, and *par reprises*; but these have a complex operation, and have their operation often changed by the degrees of heat or cold: their effects, therefore, are not to be confounded with the general effects of chalybeats. The other metallic substances

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increasing the tonic power, are in general tin, lead, and copper.

Preparations of tin were formerly much celebrated for their efficacy in epileptic and hysterical disorders; but as we never saw any effects from it as a tonic, we can say nothing of it. Lead is famous as an astringent and a tonic; and diminishes the mobility of the system, so as to have the title of a narcotic. Its use in stopping haemorrhages is well known, and it has also lately been given in fevers; but its efficacy in epileptic and hysterical disorders is not ascertained. It seems to deserve being inquired into. Copper is most frequently used, but it is of very difficult practice; for, when given in small doses, it acts as a great stimulus, particularly to the stomach, so that it is difficult to throw in enough to make it exert its tonic power.

Van Swieten mentions a preparation of copper he has seen, which had no stimulating powers; but when taken in, diffused a trilling over the body, and was of great use in epileptic cases. This preparation is not yet found out; but endeavours have been used to obtain it in this manner. All metallic matters act in proportion as they are combined with saline bodies, and are more acrid when joined to a single salt, than to a neutral. Instead therefore of combining the copper with an acid, or alkali,

alkali, we add to it a neutral salt. This preparation (the *cuprum amoniacum*), we have tried with various success; but with such as encourages us to repeat the trial. We shall speak more particularly of it, when we come to mention its effects upon some of our patients. Other tonic medicines are various vegetable matters. The first species of these we shall mention, are the simple astringents. Whether these act by increasing the contraction, and so giving a greater tension, or by diminishing the mobility of the system, is not determined. Probably they may act in both ways. Some astringents however have been much used in diminishing the mobility.

The *viscus quercinus*, or mistletoe, has frequently been found of service in epileptic cases; but its use is not known in hysterical, only as far as the two disorders are so frequently combined. Neither are we in a way of learning it, because it requires to be used for a longer time, than we have patience to wait, and should perhaps too be given in large doses. The next species to the astringents are bitters. These are tonic medicines, acting more immediately than the former, especially on the stomach; but their effects are not propagated to the rest of the system, unless they are given in larger quantities, than the usual dose is. But where the

stomach is affected; they are of great use. Whether they have any considerable effects in proper hysterical disorders, we do not know; they certainly have in various symptoms of the *hypochondriasis*, so frequently confounded with the *hysteria*.

Instead of using these two species singly, we have learnt to give them combined; for such a medicine doth the *Cortex Peruvianus* seem to be, which has almost supplanted them both. No other explanation can be given of its action as a tonic; and otherwise it must remain on the old footing of a specific. We must own, however, that this medicine, in epileptic and hysterical cases, frustrates our expectation every day. The reason is, it is of no effect, unless given in large doses, and these applied immediately before the appearance of the fits. But in ordinary practice, neither the one of these, nor the other is done; and indeed, in many epileptic and hysterical cases, it is difficult to judge of the approach of the fit. Unless therefore these are somewhat periodical, so that we can judge of the approach of the fits, as we do intermittent fevers, it is seldom of any use.

The next species are the aromatics. These are useful in preventing spasms, particularly in the alimentary canal, where they may be directly applied. But how far they may act in obviating future

future spasms, or such as are at a distance from the exhibition of the medicines, is uncertain. They approach towards another class of medicines, used for diminishing the mobility, the antispasmodics. These are the most difficult of all, to explain, often uniting a stimulating and sedative power together. This is a difficult point of theory ; but we shall just suggest a short hint about it. Medicines act upon the nerves in two ways, either as mechanical stimuli, by changing the texture of parts, or again by affecting the nature of the nervous fluid itself.

All stimuli are of the first kind, as appears from hence, that many medicines of the stimulating kind do not act on every part of the system ; but on the extremities of nerves modified in such a manner, as to make them susceptible of particular impressions. But sedative powers act more universally upon every nerve. This will be sufficient to shew how these two may be united. Thus a medicine which is very acrid, when applied to the tongue and fauces, may have no stimulating power, when applied to the stomach ; but then shew its sedative power. Thus various poisons, as the Belladonna, act topically on the stomach, by inflaming that and the fauces ; but before, and independent of that effect, exert several powers over the nervous system, which are not connected with the stomach.

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As to the antispasmodic medicines, it is difficult to say, in hysterical cases, what their effects will be, as they depend on one or other of these qualities. The stimulating powers have some effect in taking off present spasms, though not so much as the sedative; and these act altogether in preventing the return of them. The most powerful antispasmodics, are camphor and musk. Both of these are only eminently powerful, when given in large doses. But this is seldom practised, for a particular reason; because the sedative effects of camphor, are hardly to be distinguished from the deleterial. Thus it has been given to 3s. a day for several days without any effect: but on increasing it to 5ij, it produced a syncope, from which the patient did not recover without much difficulty. As it is seldom of service till brought to a degree which threatens danger, its use is much restrained. As to musk, there doth not appear any danger so immediately connected with large doses of it; but it is seldom to be procured genuine. In hospital practice too, we are restrained from the use of it, by its expence; so that we do not certainly know the proper use and extent of it. We may make one practical observation, concerning all antispasmodics, that they are only of any great service, when given near the approach of the fits.

fits. The reason of this is, that their effects are not very permanent, so that otherwise these are gone off before the fit comes on ; but their operation is not only of a short duration, but, after the first operation, they leave behind them effects of dangerous consequence. This may be best explained in the instance of the best antispasmodic, opium, concerning the propriety of the use of which in these disorders there is much dispute. It is very powerful in taking off present spasms, whether a cholic in the alimentary canal, or a tetanus in the muscular system ; but whether it is useful in the case of chronic spasms, is very doubtful.

In epileptic and hysterical disorders, as it is difficult to distinguish the approach of the fit, and as the opium, when given at a distance from the fit, is hurtful, it is little used. Physicians are generally agreed that the frequent use of it, in these disorders, is prejudicial. To explain this, the *rarefaction of the blood* is not occasioned by the action of the opium on the fluid itself, but by the relaxation of the moving fibres which it induces. This brings on the plethoric state, extending the distending power over the contracting force of the fibres, so that the opium leaves the system in a more irritable situation than before : the use of it is therefore blamed, as increasing fevers and other inflammatory disorders.

On the subject of antispasmodics, we are not to forget exercise, whether we consider it as strength-

strengthening the solids, or supporting the force of the circulation in the extreme vessels, and thereby increasing the tension of the system. But it is of difficult use in a state of great mobility, as in the true and exquisite *hysteria*; a great delicacy then prevailing with regard to any motion. Thus a lady, by laughing, was thrown into a deliquium, and an hysterical paroxysm. In this case, if the exercise is not very smooth and moderate, and is not so continued as to be rendered permanent, it is of little service: gestation, therefore, is most useful; and of all others, sailing is attended with the most considerable effects. Thus far we have spoken on the general cure of the hysterical disorder, adapting it chiefly to the *hysteria plethorica*. How far this method is to be varied with respect to particular causes, as in the flaccid chlorosis, or the case of inanition, shall be mentioned some other time.

We proceed now to speak of the method of cure for the *hypochondriasis*. In the first place, we must observe, that there are two principal genera of *hypochondriasis*: one proceeding from original temperament; and the other being an affection of the primæ viæ, arising from other occasional causes, and affecting the whole system, particularly these parts. The first of these was said to be a disorder of cold climates; and accordingly the principal remedy is warm seasons, and

and warm climates: this, however, is to be limited by some restrictions: for there are ten times the number of atrabilious inhabitants in Spain, than there is here; and the sanguine constitution is oftener found in northern countries, as in Sweden, Denmark, &c. than in Austria and some more southern provinces. Moderate warmth, then, seems to be serviceable; and extreme heats, and colds, are equally improper in this disorder. Accordingly patients labouring under it are generally advised to spend their winter in the south of France or Italy, and the summer in Britain; for a cool, fresh air, below the temperature of the body, is a necessary stimulus to them. The next remedy, is exercise; and this to be constantly persisted in: accordingly gestation is proper, but not so much an uniform one, as one that doth not fatigue, but requires some attention and exercise, as riding; for it is necessary to engage the patient's attention, which otherwise is too apt to be turned on his own ailment. Thus, in one instance, a person who had found no relief from taking exercise in a chariot, was much benefited by being put into a single-horse chaise, which required some attention for him to guide it. To obviate the patient's attention to particular objects, &c. particularly to his own disorders, a constant succession of various objects is necessary; for which

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reason long journeys are more serviceable than the same degree of exercise taken on the same piece of ground. Mineral waters are another remedy for this disorder.

In the genuine melancholic habits, chalybeats are scarcely ever useful ; but mineral waters are sometimes of service ; and as the melancholics have generally an ascendency, those waters are the best which are an alkali, as those of Seltzer and the Spa in Germany. Hence soluble tartar has come into use in hypochondriac, melancholic cases. It proves useful either as an absorbent, or a laxative, and so removing the principal cause of the hypochondriac disposition. Another useful remedy is warm-bathing ; and this is much the same, whether it is with or without impregnation. It seems to act by watering the surface, and thereby relieving the rigidity, and determining the blood and nervous power to that part. These are the most general remedies ; but as the disorder chiefly appears in the alimentary canal, we should attend to that. Here we can exact a regular diet, choosing solid food, and avoiding ascents, and always having in view to support the tension, and give a proper stimulus. We must also take care to obviate the costiveness usual here, which proceeds from the general temperament ; but, if allowed to advance, becomes an aggravation of it. The aloetic purges are the best

best remedy for the purpose, as they may be given in small quantities, so as to produce a moderate stimulus, and are the only purges of the vegetable kind that do not leave a costiveness or astringency behind them.

It is doubtful whether any combinations are of much effect. The best is mercury, joined to aloes. If therefore we apply proper exercise, regulate the diet, and avoid costiveness, we do all that is necessary. As to bitters and aromatics, though they may be of service in restoring the tone of the system, especially the bitters ; yet, by a too frequent use of them, the stomach is weakened and worn out, and the hypochondriac ailments brought on. It is much the same with antispasmodics, as in opium, which is most used of any of them ; for we are obliged to be sparing of it, as it weakens the tone of the stomach and intestines, relaxes the system, and introduces costiveness, which is so troublesome in hypochondriac complaints.

HAVING given the general method of cure in hysterical and hypochondriac disorders, we shall now make a few remarks on different species of hypochondriasis, which admits of more divisions than the hysteria. We have

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hitherto kept most in view the *hypochondriasis congenita*, or first species, depending more immediately on the melancholic temperaments. The second and third species, the *byp. a pathemate*, and *byp. a studio nimio*, commonly coincide with the first, and appear in the same temperament; as only such melancholic temperaments are capable of being so much affected by passion, and of pursuing an object with so great attention. The method of cure, therefore, in these, will be much the same: sometimes, however, they may be occasioned by other causes independent of original temperament; in this case it is impossible to lay down any general rules, but we must leave the whole to the direction of the physician.

The next species, *byp. a venere nimid*, and all the others, differ from the foregoing, that they are not connected with the melancholic temperament; on the contrary, this particular one is often found in the hysterick sanguine constitution. The only very powerful remedy for it seems to be a very constant use of cold bathing.

The *byp. hysterica* gives a combination of the two disorders, intermixed in various degrees. Cold bathing and tonic medicines are the principal remedies for this; and we should rather keep in view the mobility, which is the foun-

foundation of the disorder, than the present hypochondriac symptoms.

The *hyp. artbritica* has been attempted to be cured by all the various remedies used in both these disorders: the safest and most efficacious one for obviating or curing the various affections of the alimentary canal depending on the gout, is the use of chalybeats; we say it is the safest on this account, because these affections of the alimentary canal are commonly treated with vegetable tonics, and particularly the bark. Now we know, that a long continued course of bitters will cure the gout, that is, remove the inflammation affecting the extremities; but this method of cure seldom fails to bring on the *hyp. artbritica*, and other disorders of the alimentary canal, and often too, in other parts of the system. It seems absurd, therefore, when the disorder appears only in the alimentary canal, to endeavour to cure it by those very methods which would throw it there from off the extremities. The use of bitters, therefore, of all kinds, in any considerable degree, appears to be prejudicial here; for though they may relieve flatulency and other symptoms, they will seldom fail to renew them again, and in time wear out the tone of the stomach, producing a variety of chronic and fatal diseases. Connected with *hyp. artbritica* is the *hyp. nepbritica*.

nephritica. In nephritic cases the use of astringents, as *uva ursi*, and of absorbents, particularly lime water, is of considerable service; so that it is very probable that they will be of use in the affections of the alimentary canal depending on nephritic cases. Here is another proof of the connection between the *byp. arthritica* and *nephritica*, because lime water, which is mentioned to be of such service in these last cases, is very useful in the gout, and a safe remedy in obviating the affections of the alimentary canal depending on the gout.

It may be questioned how far cold bathing is proper in the *byp. arthritica*. The proper course of the gout is an inflammation affecting the extremities; and cold applied to the feet in stopping that course, brings on worse consequences. It may therefore with very good reason be doubted whether cold bathing is proper in these cases. We have often seen bad effects from it, and have also seen it used with advantage in many cases of the *byp. arthritica*. How far, and in what cases, it is proper or otherwise, we cannot enter upon here.

The other species, as the *byp. ab inanitione*, *emphractica*, *a suppressis evacuationibus*, do not admit of any remarks here: as these are the principal disorders, and the removal of the hypochondriac symptoms depends on removing those

those disorders. The *hyp. a repulsi evacuationibus* is a matter of different practice. We commonly attempt to cure it by endeavouring to raise some precarious evacuation, but often without success. There are some instances mentioned in Sauvages, that, if imitated with success, might be very advantageous. Thus he mentions in a case of the itch, of giving the patient the same eruption that had sunk inwards, by inoculation, which wrought a cure. The *hyp. a febre interrupta* is also of very obstinate and difficult management. It has been cured on the general plan of hypochondriacal cases, as by constant exercise: it has been cured too by sudorifics, as Dover's Powder. In one or two cases, where marks of a periodical fever, though very obscure ones, may be perceived, the bark has been of great service. In all such cases, the bark should still be attempted, as being the only sure means of obliterating all tendency to periodical returns. Celsus mentions a method of changing a slow fever into a proper continual one: but this is never practised.

Having now finished our remarks on these disorders, we shall mention some of our patients labouring now under them, beginning with an hysterick

hysteric case.* Such is that of Elizabeth Dodds. The mobility of her temper appears from her having been subject to convulsive fits in her infancy ; these were removed at the approach of her menses, which came early (another proof of a sanguine constitution), and she continued well for four years. The menses being then suppressed, she again became ill, and is now affected with convulsive disorders, though properly in an hysteric form. This mixture of epileptic and hysteric symptoms, often renders it difficult to determine which class the disorder is to be referred to. In this case it appears to be hysterical, from its method of coming on ; it beginning with a cold, clammy sweat, and then a lump rising in her right umbilical region, which gets up to her stomach, and then a convulsive motion takes place. The compression she feels in her breasts, is another mark of the disorder, being very rare in epileptic, but almost constant in hysteric cases. Her other symptoms are no ways peculiar or singular. There are two or three particulars in her history worth observing. One of these is the cause of her suppression of the menses, at least for the last time, though before

* Vide Clinical Cases at the end of the Lectures.

before she had had them only for three or four times in the year. This was occasioned by eating fish and milk together, during the menstrual flux. The fact is uncommon : but we often reject facts, because we are not able to explain the cause of them. Milk, however, is often found prejudicial at that time ; and milk and fish, taken together at any time, often disagree with people. The reason of this would require too large a discussion for our present purpose. This, however, we can venture to affirm, that we have met with a hundred instances of bad effects produced from fish and milk taken together, and particularly from them taken either together or separate, during menstruation. Another circumstance to be observed is the sudden suppression of the menses, attended with a fever, and this by an eruption. She had one fit in May, but none violent before September, when the eruption went in. It is common to impute disorders to the repression of an eruption ; but it is not certain whether, in this and many other instances, the eruption is not an effect rather than a cause. That weak determination to the surface, which would be a foundation for the disorder, might also occasion a tendency to receive eruptions.

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Though these seem to be marks of a peculiar acrimony residing in the body, they are no proof, but may perhaps proceed merely from a change of the determination from the surface to the internal parts. Another circumstance to be attended to, is her difficulty of making water, returning unequally at different times. This may be connected either with the menstrual flux, or the hysterical disorder. But what is most of all to be observed, is her vomiting of blood. The nature of this at first seemed uncertain, whether it was owing merely to the violence of the convulsions, or to the suppression of the menses. There was no appearance of any regular interval before the last vomiting; but as that came nearly at the menstrual period, it is more probably of the last kind.

As to the method of cure, our only view could be either to restore the uterine flux, or in general to obviate the mobility of the system. As to the first, we thought it necessary to wait for the *molimina naturæ*; for it is a general observation, that general attempts to restore the menstrual flux seldom avail, and that we succeed best when we discover some symptoms of the *molimina naturæ* to direct us. Here, too, as the uterine flux was supplied by the stomach,

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we could not use the stimuli, employed as emmenagogues ; as they must be applied to the stomach first, and would occasion an irritation there.

While we were waiting on these accounts, we endeavoured to obviate the mobility of the system, using moderate tonic medicines, as the elixir of vitriol, Nov. 29, as we were uncertain what her stomach would bear, especially there being an hæmorrhoidal flux here from the stomach. In the mean time, the patient complained of want of sleep, and of a pain of her side in the abdominal region ; and as we commonly suspect these to be spasmodic, we applied, December 3, laudanum, and the rather, because its use has been much commended, joined with the elixir of vitriol : it however had no effect, which perhaps may be looked upon as a confirmation of what was said about it, with regard to hysterical disorders. In trying other tonic medicines, being obliged to reject all such as would stimulate the stomach, and to use mere astringents, we (December 17) employed the *uva ursi* ; but the stomach not bearing this easily, and it being a tedious remedy to wait for, we dropped it. We then had recourse to chalybeats, December 19th ; as the *tinctura martis*,

martis, which, not having effect, perhaps for want of a proper quantity, and the pains of her stomach recurring, we tried laudanum again, but to no purpose. She then told us that the pain was not to be removed by laudanum, but was such as usually precedes the hæmorrhoidal flux. As this was about the menstrual period, we tried to determine it to the uterus by a glyster and pediluvium, December 20. Perhaps this was improper; for where there is a determination to a particular part, it is not easy to change it; and by any stimulus applied to any remote parts, we often promote that determination: perhaps, therefore, these medicines did mischief, for the hæmorrhagy came on immediately. This should have been considered as a natural one; but as in all violent hæmorrhages, there is reason to apprehend an excess, we applied ligatures to the extremities, and ordered her hands to be dipped in cold water. This is very common in hæmorrhages; but here it had the effect of an irritation, and brought on a fit immediately. Afterwards the vomiting of blood went off by degrees, December 26; rather, perhaps, in consequence of its having continued its due period, than of the effect of the medicines. When the vomiting was

was going off, she could discern the change of its having a saltish taste. The reason of this seems to be, that whilst the vessels were throwing out their whole contents, the saltish part of the serum, the whole sapid part, was blunted by the other part of the blood; but when the serum alone came to be thrown out, it was then very discernible.

Another remarkable circumstance was the state of her pulse, which, during the hæmorrhage, was very regular, but has been much more frequent since, contrary to the general rule of hæmorrhages. The only explanation of this that can be offered is, that the hæmorrhage was a natural one, in consequence of a determination of the system to the vessels of the stomach, at that time. This, then, being a precarious evacuation of the uterine flux, made the pulse less frequent, by taking off the tension. The appearance of the blood was not of pure blood, but much diluted, and the evacuation was not so alarming as might appear at first sight.

We should, perhaps, have thought of applying blisters to the lower extremities, which have a power of changing this determination, and perhaps of acting in other ways; accordingly, we have many instances of hæmorrhages at the

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nose and other parts, being immediately relieved by the application of blisters. We did afterwards apply them, December 23d, but too late.

The plan we shall now pursue, is to have in view the restoring of the hæmorrhoidal flux, especially towards the return of the next period, as we may hope it will keep to the period. The remedies we shall apply are, bathing, friction, and blisters, at the lower extremities. These, however, are difficult to combine; for if blisters are applied to her ankles, it will not leave room for the bathing and frictions to be alternately used. They must therefore be applied above the knee. The medicines now given are chalybeats moderately diluted, and we shall go on increasing the dose. We regulate their form in imitation of the Bath waters, giving them in warm water, as this is often of service in complaints of the stomach like hers. They have as yet, Jan. 2, had little effect. If they are of service, we may perhaps try what heat alone will do.

THE next case we shall mention, is that of ELLEN DEWER. If you take the first account given of her symptoms, it seems to be an hysterical case; but these are rather her former than her present symptoms. From her pains in the stomach, after eating, and other hypochondriac symptoms, her disorder seems to be an *hypochondriasis hysterica*; but still it retains much of the hysterical nature, as appears from some spasmodic affections, communicated from the alimentary canal to other parts of the system, as the head-ach, degree of asthma, &c. One symptom in particular deserves observation, the swelling of the ankles and joints of her fingers, attended with some pain, which occasions some difficulty in moving them.

The gout and rheumatism are affections often resembling each other, attacking the same parts; so that it is sometimes not easy to determine which the disorder is. In most cases, however, we may distinguish them by this, that the gout discovers more or less connexion with the stomach. The rheumatism doth not. Though, indeed, sometimes true rheumatic cases are found

found to affect the *primæ viæ*. Other marks are necessary, therefore ; but we shall not enter upon the discussion of them now. These rheumatic affections, such as this patient is troubled with, are frequently connected with the *hypochondriasis*, and more commonly with the *hyp. hysterica* as here. Nervous disorders were said to be affections of the nervous system, in opposition to the sanguiferous ; but this case is an exception : for here we have a rheumatic affection, which may be considered as a spasmodic affection of the sanguiferous system, connected with the *hyp. hysterica* ; but it is so distinguished from the other rheumatic affections, that it is not attended with a fever. Symptoms of this kind generally yield to the remedies of the primary disorder ; but sometimes they are known to continue for the greatest part of a person's life, after the primary disease is removed.

The common rheumatic affections are attended with a sense of pain and swelling ; and the pain is most severe, when the parts are warm. But this kind of pain is greatest in the cold ; and, when the parts tumify, it remits.

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To give now the *rationale* of our practice in this case.—We first tried the magnesia alba, chiefly as a laxative; for though, as an absorbent, it takes place in relieving indigestion, and other complaints of the stomach, yet absorbents only relieve the present symptoms; whereas absorbents and laxatives together, as this medicine is, remove the costiveness, which is often the foundation of this indigestion, &c. We gave it only in small doses, because in large ones, instead of a laxative, it purges, and saline purges are improper for persons in these disorders. This not answering, we had recourse to another laxative, to obviate the costiveness, and one of the most useful ones, being a composition of aloes, guaiacum, and Spanish soap.

Aloes is almost the only purgative, fit for an habitual one, as it may be given in small doses, seldom operates much, and its effects remain without that abstraction which is the consequence of other purges. But as this costiveness may be considered as owing to some degree of torpor in the intestines, guaiacum was added to the aloes as a stimulus, and is preferable to any other in this case, as having also a laxative quality. The soap was added, to

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forward the solution of the guaiacum. By administering the dose in this manner, we secured a regular belly. We next attempted to obviate the spasmodic affection by a medicine often tried with good effect, the *elixir proprietatis*. This, as containing myrrh and saffron, is to be considered as an antispasmodic, and with aloes as a bitter. To this we added a small dose of laudanum, so that it could not act much as an astringent, and, combined with the other medicines, would be an antispasmodic. These were given only as palliatives: but with a view to a radical cure, as the hysteria depends on a mobility of constitution, we tried chalybeats.

Much has been said concerning the nature of throwing in these in too large quantities; but experience daily lessens these apprehensions. We began with small doses, and afterwards increased to 3s. of tinct. mart. What effect it has had, is doubtful, as these persons are apt to aggravate their symptoms; but she seems to be considerably relieved. It would be difficult to make a complete cure here, as it would require much attention to her diet, air, and exercise, which cannot be practised here.

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The next patient is MARY MACKENZIE. In this case there appeared some ambiguity, whether it was to be considered as epileptic purely, or also as hysterical. The fits are said to begin with an heaving at the breasts, &c. which symptoms more generally occur in epileptic cases, though they are sometimes found in hysterical. It may be considered then as an epilepsy, with some affection of the alimentary canal, combined as is commonly found in women. It would be unnecessary to speak here of epilepsies in general, as the same rules may be applied to them, as were given for hysterical cases; for they both depend on the same mobility, produced either by repletion or inanition, which will occasion an ataxia, from which they arise.

Topical affections of the brain, tumours, and various other irritations, oftener produce the epilepsy than any other spasmodic disorder. These may happen independent of any consideration of temperament or time of life, and are often incurable, as the topical affections themselves are. We shall not here enumerate the various remote causes which may occasion the epilepsy, and to which the method of cure is to be directed. Oftentimes we cannot

discover them, as in affections of the brain itself, and have seldom an opportunity of applying our remedies to them. In general however, as in hysterick cases, the cure depends on avoiding occasional causes, or removing the mobility of the system. The mobility of the system is commonly cured by the same treatment in both cases, though not always.

In the beginning of the present disorder there was no reason to suspect any topical affection. It was brought on by a fright, which, as Boerhaave observes, when sudden and violent, is a frequent cause of epilepsy. Probably it operates in a constitution predisposed, to these disorders. In epilepsies it is found, more than in hysterick, or other such disorders, that, when once occasioned, they recur on very slight causes. Hence the study of avoiding occasional causes, is more difficult here. The present case we may take to depend on the mobility of the system, as the patient's constitution gives evident tokens of such a disposition. Though no topical affection appeared at first, one has happened since an obstruction of the menes. This is not to be considered as the foundation of the disorder; but probably it may occasion its continuance, and

and make it more obstinate. Oftentimes, indeed, this single circumstance will occasion disorders of this kind ; but as general attempts to restore the menses are precarious, and seldom of much avail, we thought it best to wait for other symptoms, and expect the *molimina nature*.

As to our practice in this case ; as a fit was apprehended to be at hand, we tried an anti-spasmodic, camphor, and sal cornu cervi. These, when combined, unite a stimulating and sedative power together. They were ineffectual here in two repeated trials, failing perhaps the first time, by being given at too great a distance from the fit ; and the second perhaps doing harm by their sedative quality. In the mean time the menses appeared ; but we were not informed of it till after they had disappeared again, after continuing an hour or two. Glys-ters were used in order to renew them, but without any effect. As we were in hopes that this was to be looked upon as their proper period, we were willing to wait for the return of it, and in the mean time applied palliatives. After a pretty smart purge to obviate costiveness, opiates were tried in order to allay any irritation that might have been occasioned,

occasioned, and to give an opportunity of observing its effects. That night she was awaked by a fright, such as used to precede her fits.

We may observe here, that epileptic fits generally come on, either when the patient is just falling asleep, or coming out of a sleep, and in both cases are generally preceded by frightful dreams. Opiates have often the effect of producing frightful dreams. Perhaps this may point out something with regard to the application of them in epilepsies. We intended to have tried its effects a second time, but were interrupted by the menstruation. She complained of a pain in the side, which was probably an inflation of the colon. We tried blisters here, as they are found to be of service in internal spasms, as well as inflammations; and accordingly they seemed to have a good effect. As she had some complaints of a headache, leeches were applied, which seemed to relieve her.

We next began to think of treating the disorder as depending on mobility by tonic remedies, and, after some hesitation, determined to employ the cold bath: the use of this was repeated twice a day, which is oftener than the usual practice; but it

it does not seem to have any bad effect, but rather a good one. At least it appears to have prevented the return of the fit so soon as it did before toward the approach of the menstrual period, reckoning from the last appearance. We attempted to restore the menses, but without effect. The reason of this perhaps might be, that, when the menses have been long obstructed, partial returns of them are apt to deceive us as to the period, especially when they continue only for so very short a time as an hour or two, as in this case. Perhaps too it might depend on a more fixed obstruction of the uterus than our medicines have been able to remove. As the menstrual flux is encouraged by determining the blood more strongly into the descending aorta, we endeavoured to assist this by keeping the body open by aloes, which is also in general supposed to favour hæmorrhagies. To this we added assa-fætida, which is said to have a particular stimulus on the uterus. This indeed is very doubtful; but independent of that, it would be of service here, when joined to the aloes. We added however a more powerful stimulus, the calomel.

Much has been said concerning the effects of mercury, in restoring the menstrual flux. Without doubt, when continued for some time, and properly managed, it promotes all the secretions. Hence however it was principally designed to

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act as a stimulus to the intestines. How nearly to the uterus foetids and other such medicines may be applied, has not been determined. Some practitioners, both among the ancients and moderns, have thrown them into the uterus itself by the vagina: but this is not practised in this country.

As the rectum is the next way to be attempted, we threw in by it some vegetable stimuli, as pullegium, sabina, ruta, which are generally reckoned the most powerful. To determine the blood more strongly into the descending aorta, frictions were also applied to the extremities, and the warm bath in the evening.

Such are the medicines we have given, and which we have generally found to be most effectual in such cases. But we have joined remedies, which will perhaps appear incompatible, as the cold bath, which at the approach of menstruation is rather a singular practice: but from the cases mentioned by M. Pomme it should seem less hazardous than has generally been imagined. He relates instances, in which an obstructed menstruation has been removed by cold bathing, cold drinks, and even cold glysters. The cold bath was at least proper here in one respect, as it would tend to restore the tone of the system, and thereby remove the foundation of the disorder. But though the cold is often found to obstruct the menses,

menses, that is not such a cold as the cold bath, but a more durable one; as for instance, that occasioned by having the feet wet, where the body is subject to the moist exhalation for a time. But in the cold bath, its chilly effects are generally succeeded by a glowing heat. We also tried another experiment, though not without being well convinced of the safety of it.

It is commonly proper to prevent any thing cold coming near the body, when under a course of purgatives, as it will commonly either increase their operation, or stop the evacuation. But here we have given the cold bath and mercury at the same time, without any bad consequences. The cold bath then, if not accompanied with a fright, doth not seem to stop the menses: nay, we have known the case of a woman under menstruation fall into a river, who being put immediately into a warm bath, the menses were not stopped. Our remedies have not yet succeeded; but we still continue them.

I N the next case we shall take that of JANE MURRAY. Our system doth not apply very well; as there is not that particular temperament here, disposing to mobility, and laying a foundation for hysterick and epileptic cases, any further

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than that she is young and thin. But whilst we have not the indication, we have no reason to suspect any topical affection. She is at that period of life, when the menses might be expected; but as yet there are no symptoms of their approach: the disorder is of a long standing, and is said to be owing to a sudden fright, which has been already mentioned as a frequent cause of these disorders.

At first we considered it as an epilepsy mixed with hysterics, being told of a swelling in her right umbilical region, &c. But no such symptom now appears. At present, from the manner in which the fits come on, and from their going off without their leaving any pain behind them, we may look upon it as a pure epilepsy. As to the cure, we have no other indications than her being young and thin, and the occasional cause which was said to bring it on. But as in these young persons the primæ viæ are apt to be affected, and this disorder is easily renewed by indigestion, we used absorbents at first, with any other view; also in order to give an opportunity of observing the difference in the effects of magnesia and oculi cancrorum; but the effects of magnesia did not shew themselves. We thought next of applying some tonic remedies, as the stomach might not perhaps easily bear these after the magnesia: we previously gave a dose

dose or two of the bark, as a stomachic. We then made trial of the *uva ursi*, which we consider as an astringent, both from its taste and its effects in tanning leather. We first gave it in small doses, but kept increasing it gradually: as all such remedies require to be given in large doses, and for some continued time, we gave it for eighteen days, and in the usual doses, and were continuing it, when the stomach refused it, and the fits recurred, which discouraged us from any further use of it. As we still could apply only tonic medicines, we had recourse to the *ammoniacum cuprum*, which we were applying also in the case of Alexander Drury.

This patient was an adult, with no peculiar marks of the mobility of the system: and indeed we are generally to expect this in younger persons. In these, except we can see some occasional causes, as in their way of life, from a series of *crapula*, *intoxication &c.* we are to suspect some affection of the brain itself, which is incurable. Accordingly we find the *epilepsy*, when occurring in adults, to be seldom cured for life.

Both the case of this patient and Jane Murray are to be looked upon as examples of the effects of the *ammoniacum cuprum*. We mentioned concerning this medicine before, that it was an attempt to imitate that preparation of copper mentioned by Van Swieten. In both these cases

however it acted as a stimulus, and produced both vomiting and purging. But a repetition of these medicines diminishes their stimulating power. Whether it doth their tonic power also, is not certain. We gave it here in such doses, as just to excite a nausea, that, when it was at the lowest state of its stimulating power, it might act as a tonic. In both cases it did not act as we could wish; for though it occasioned no vomiting, it generally purged. Unless then its purgative effects are diminished, we must diminish it in J. Murray's dose, and have already been obliged to take away the morning's dose; for we are more likely to escape its purgative effects by giving it in the evening. This effect of it may perhaps be owing to the nauseousness of the taste: accordingly in another patient, who was taking corrosive sublimate, by removing this nauseousness he was not affected with three grains, though before he could not bear two. We shall therefore cover the taste here, and also change the form; for even the sight of the pills may occasion nausea.

As to the effects of the medicine, it seems to have cured A. Drury. His fits used to recur at the interval of a month: but he was longer in the house here without any fit; and we ventured to trust him to the air; though this was very hazardous, as an epilepsy is apt to be renewed on the slightest occasion. But we were willing to

to see whether the cure was not to be imputed rather to a change in his way of life, which will often have great effects in the epilepsy; and therefore dismissed him to his former occupation. He acquainted us to-day, at the interval of a fortnight from his dismission, that he has continued free from fits. We should have observed, that we gave him some doses of the cuprum ammoniacum to carry along with him when he was dismissed. At first we repeated the dose frequently, in order to ascertain the proper dose to be given; but after a week or two we gradually increased the intervals of the doses. This rule ought to be observed perhaps in all medicines, given to oppose periodical returns of a disorder.

There remains some doubt here as to the cure being effectual, since he at present has the same inflammation in his eyes, which was mentioned in his case to have prevented his former fits. It should seem that any fullness of the vessels of the head may be an occasional cause. We have ordered him to remove this fullness by leeches; but must wait some time, before we can determine concerning the efficacy of his case.

As to Jane Murray, she was seized again last night with a fit, and at no greater interval of time than formerly. Perhaps this may have been owing to an occasional cause, the medicines having not yet enabled her to resist all such.

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is possible that a very little change in her diet may have been the cause here; but we cannot determine this at present.

The only other patient, of this kind, is **GEORGE BURRELL**. Here we see the epilepsy very pure, as common in males, but in a very moveable constitution, the patient being young, sanguine, florid, and near his acmè. It has subsisted now for two years with intermissions, but returning on any slight occasion. His fits have nothing peculiar in them, only that they begin with a numbness and formication, rising in the palm of his left hand, and proceeding up to his head, when he falls down in a fit. Such circumstances as this are not uncommon in the epilepsy. In some instances of this kind there has been a particular affection of the nerves of that part, either from acrimony, a wound, or some such cause. This motion running from the extremities of the nerves to the brain, and causing an epileptic fit, may often be stopped by ligatures: and these cured the present patient last year. Perhaps we ought to have employed them now; but as they are not very accurate, and his fits come on generally when he is fallen asleep, so that they could not be well applied at the time, we had recourse to other remedies.

Oftentimes, where there is a suspicion of a topical affection, destroying the part by blisters, issues

issues, setons, &c. has been found to cure. Sometimes the *sensorium commune* is affected, though the sensation first appears in the extremities.

A case is mentioned by Bonetus of a man in an epilepsy, who had a swelling in his groin, which sent a formication to his foot; and this arising again to his head, he fell down in a fit. This shews that particular affections of the extremities of the nerves are propagated from thence to the *sensorium commune*.

In the present case we thought proper to employ a tonic remedy, the cold bath. This is frequently efficacious in hysterick cases, as appears from that treatise of M. Pomme before mentioned. As far as both disorders depend on the mobility of the system, it is probable that it will answer in epilepsies as well as in hysterick cases. It seems to have had a very good effect here, it being now almost six weeks since he had any fit; and as he has lost that torpid look, which he had, and recovered his complexion and natural alacrity, he has had threatenings of fits more than once, which is a further proof, as it discovers some resistance in the system to such efforts.

Having gone through these patients, we shall now finish our remarks on the hysterick and epileptic cases, and proceed to the palsy. We shall not here enter into a comparison between this disorder

disorder and the epilepsy, only make a few short observations. In the case of an epilepsy or convulsions in general, the flexors are more commonly affected than the extensor muscles ; but in the palsy, it is quite the reverse ; the flexors having oftener a power of contraction, whilst the extensors are paralytic. This doth not depend on the disposition of the system, but on that of the parts themselves. We shall perhaps speak more fully of this hereafter.

At present we must hasten to our paralytic patients ; and first of all we shall speak of JANE KERR.—The history of her disorder is mixed with a fever ; but that part we shall refer to the time when we are speaking of the other fevers we have had. As to the disorder in general, if we are right in our notion, that muscular motion depends on power derived from the brain, the palsy must depend on an interruption of the flow of this power. This may be occasioned by an affection of the *sensorium commune* itself, or of particular nerves in their course. As to the causes of these affections, one of them, compression, with its effects, may easily be understood. But what other causes there may be, we are quite ignorant, and what we say of them must be mere hypothesis. We may suppose that this nervous power, as being fluid, is capable of different degrees of consistency, and may by that means raise obstructions :

obstructions: we may look upon the nerves as tubes, or vessels, and for that reason liable to constrictions. But that the palsy is not owing to obstructions, appears from hence, that a powerful stimulus, as electricity, will still excite motion; and though this is only for a moment, it shews the passage to be pervious. If it should be doubted whether electricity has any more than a topical effect, the affections of the mind shew that the palsy doth not depend on obstructions, but on some torpor of the nervous power itself.

We are thrown out of every organic cause by the case of sleep, and by the common syncope, which can be supposed to be nothing else but an affection of the nervous system, as very slight alterations are sufficient to bring it on. In poisons too there is evidently a power acting, not on any organical part, but on the nervous power itself. One cause in particular which acts on the extremities of nerves, and communicates with the *sensorium commune*, that of pain, often leaves this torpor or palsy behind it. This pain may either be purely spasmodic, as in the *colica pictonum*; or a mixture of spasmodic, and inflammatory, as in nephritic affections, where the spasmodic chiefly prevails; or more purely inflammatory, as in the rheumatism. What other causes besides these may act on the system in producing a palsy, is difficult to determine. In

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the present case the palsy succeeded a fever, which is an ambiguous circumstance.

Fevers have been celebrated for relieving palsies. But as Sauvages observes, fevers increase the vital powers, but diminish the animal, or organs of voluntary motion. But though they do this at their first attack, they restore these animal powers when they come to a proper crisis. In many cases however, as the crisis is not perfect, fevers may produce paralytic affections, or may operate by leaving a rheumatism behind them.

The last fever of the present patient left a rheumatic affection in her right hand; but this did not last long, and her left seems to have been much relieved since.

It has been proposed to relieve the palsy by exciting a fever. Boerhaave proposes only to excite a *calor febrilis*; and indeed it is not in our power to excite a proper fever. There is a foundation for the observation; but we have frequently seen fevers supervening in palsies, without curing them. In general they leave them in the same state as before; but sometimes they considerably aggravate the palsy. To speak now to the method of cure.

We shall divide the palsy into two kinds, not by its external symptoms as others do, but by its proximate causes. The first is where it depends on an affection of the organic system exterior to the

the nerves ; the second, on an affection more purely in the nervous system ; but what this is, we shall not say. This is the case in melancholic torpor, as by poison or pain ; is sometimes in the vascular system, as in the rheumatism ; but it acts upon the nervous, and so produces palsies. These two kinds require different methods of cure.

In the first, evacuations are the most proper remedies, and stimulants are generally hurtful. In the second, where there is a torpor in the nervous power, all kinds of stimuli, and particularly electricity, are chiefly to be relied on.

In the present case the disorder seemed to depend on some cause affecting the nervous system in general, which excludes topical affections, as it was in consequence of a general affection, a fever, and attended with a hemiplegia. We consider it therefore as most likely to be cured by stimuli. We intended to have tried some other practices, but were prevented by the accession of a fever, and again by this recurring a second time. As we have now no time to lose, we have had recourse to electricity, which has operated as well as we could wish. We conducted it so that its application should be gradual ; but had no occasion for any great nicety in the management of it here, where there was no suspicion of a topical affection, or any considerable affection of the *sensorium commune*.

We may judge of its effects chiefly by its restoring the motion of the parts; and perhaps no less by its renewing their plumpness, when they have been liable to an atrophy. Both these effects are discernible in the present patient.

TO this paralytic case we may properly subjoin that of J. RANDALL, appearing in the various forms of head-ach, mania, convulsions, palsy, &c. Hence we may draw this remark, that all these proceed from like causes; and we are confirmed in this on opening the bodies of those who have died of palsies, epilepsies, the mania, or obstinate head-ach, all which we often find to proceed from like affections of the brain. These causes undergo different modifications in these different disorders; but this difference escapes our observation, and is difficult to explain. But all such affections of the nerves, and the disorders dependent on them, may be referred to proximate causes; and what was said of the palsy, may be applied to each of them. In the one case the disorder depends on a cause exterior to the nerves themselves, as an external compression depending on an affection of the hydraulic system, or such an organization as we understand, and can examine,

amine. In the other it more properly depends on the nervous system itself.

This is most difficult of explanation, but may be illustrated in some measure by the case of ordinary sleep. There is not one hypothesis concerning sleep, which takes in the state of the sanguiferous system, and makes it be connected with a revolution of the circulation, that has the appearance of probability; but on the contrary we find it to depend on certain laws peculiar to the nervous system, independent of the sanguiferous. Thus at any time, by procuring an absence of all sensation, we may in general bring on sleep. Again, supposing the usual period for sleep to recur, we may, by the application of stimuli, keep the body awake. But we may observe sleep to be periodical, independent of more or less exercise, or of difference of diet. The period of awaking becomes regular in many people, and recurs at the same time. These circumstances shew that sleep depends on certain laws peculiar to the nervous system, and independent of the sanguiferous. We may suppose this to extend to many of the disorders we have mentioned. But to come now to this particular case—it seems to belong to the first kind, and to depend on some organic affection, or of the hydraulic system. We suspected it to proceed from a topical affection of the brain, on account of the symptoms

symptoms appearing about his head and his face; for topical affections of the brain generally discover themselves in the face, both in consequence of its proximity, and of the distribution of its nerves, which arise immediately from the brain.

With regard to the effects of proximity, we may observe, that if we give a quantity of opium to an animal, which in time would kill it, its effects appear first in the most distant parts; so, if a tendon or nerve is lacerated or pricked, it doth not always produce a tetanus, but frequently a locked jaw, which can only be explained by proximity. Here then the convulsions and distortion of the eyes, the general stupor, the appearance of palsy in both sides, made us draw the above conclusion, which, though not certain, will in general be found to be just. There may indeed be causes acting on the common organ of the nerves without a topical affection, as by a more general affection of the nervous system, and manifesting themselves in this manner; but these will be in a less degree.

Topical affections may be very various, as tumours, abscesses, ossifications, and their consequences, in different parts of the brain. There are two which may be noticed as being most general and most frequent. These are a too great accumulation, 1. of the blood, 2. of serum in the vessels of the brain. These are supposed to act

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as being effused: but oftentimes they are only in consequence of a stagnation and regurgitation, whilst the fluids are still confined within their vessels. Effusions indeed are often seen; but these are probably only the effects of that stagnation in a higher degree, in which case the same takes place here as in other dropsies of the body.

To prove the truth of our assertions with regard to these topical affections, we may observe, that the venous vessels of the brain are more liable to such an accumulation, stagnation, and regurgitation, than any others of the system. This has been but little attended to. Of the various circumstances which lead to this conclusion, one is the quantity of blood distributed to the brain.

It has been computed that one third of the blood sent from the left ventricle is distributed to the head, and the chief of that to the brain. But if we take of the blood sent off by the subclavian and other vessels, we may allow between one fourth and one fifth to be sent to the brain, which is a large quantity in proportion to the size of the viscus. These vessels then being extremely turgid, the effects of any irregularity in the sanguiferous system will be particularly felt there. Another circumstance is the peculiarity of the venous system. The venous blood here is not carried from smaller to larger vessels, as

in other parts of the system, but immediately conveyed into sinuses. Again, the entrance of the veins into these sinuses is very unfavourable, being contrary to the course of the blood in the sinuses. Nature seems too to have provided against a too great distension here, by surrounding these sinuses with transverse filaments, and enveloping them in the dura mater; so that, in case of an accumulation, it must fall upon the vessels. The jugular veins are also unfavourable for carrying off the blood, as we may judge from the large cavities provided there. Again, the venous blood must move slowly in the brain, for want of muscular compression. Even the structure of the jugular veins shews the slow motion of the venous blood; for though favoured by the common erect position of the body, they are provided with valves, which yet are not sufficient to prevent regurgitation. A proof of this we have in that remarkable pulsation in the brain, which may be seen if the cranium is at any time laid open, and which is synchronous with respiration. This shews how apt the venous blood is to regurgitate, and so to be accumulated in the vessels. The size of the jugular veins also is greater in proportion to their corresponding arteries, than in any other part of the system, which proves that the blood moves more slowly in them. Another argument may be taken from the

the final cause, which, though but a bad one, is generally mentioned in all hypotheses. It seems to have been the intention of nature, that the vessels should be full and turgid, in order to serve for the flow of the nervous power. But this very fulness may by compression interrupt the nervous fluid, and produce the effects discernible in a delirium and in fevers. It is indeed an established fact, that the venous vessels of the brain are more liable to have the blood regurgitating and stagnating in them, than those in any other part; but this stagnation occurs more readily in some systems than in others, and particularly in those of the proper melancholic temperament: accordingly such persons more frequently turn out paralytic, epileptic, apoplectic, &c. It happens more readily too in old age, for the same reason, that the melancholic temperament prevails more then, and that there is a greater determination of blood to the venous, and less to the arterial system, as we advance in life. It is more frequent too in those that are of a plethoric habit. Lastly, it occurs more commonly in such as, from a particular conformation, have more blood than usual distributed to the brain, as persons with a large head, especially too if they are short-necked, as also those who have a turgid florid look. Accordingly, from these appear-

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ances we may often say what persons are likely to be affected by palsies, apoplexies, &c.

Having now pointed out the general causes of their disorders, we shall next mention the occasional causes, which may determine them to prevail in a higher degree; but this would be very difficult. Perhaps the state of the arteries in the brain, variously modified by a number of different causes, may be one great cause of the nervous plethora in these parts, as having no considerable impulse. Whether the arteries of the brain have any thing peculiar, has not been determined. Anatomists generally observe, that they are more lax, and have a thinner muscular coat than others; but whether this may determine them to a greater mobility, is not certain. But to return: We made two kinds of plethora, either of the blood or serum, in the same manner as they are divided by modern pathologists. But there is a doubt here, whether this accumulation of serum is not in consequence of a general stagnation; so that at bottom there is only one kind; or if there are two, they are difficult to distinguish. We can indeed in some cases see a more turgid state of the blood-vessels, and in others a greater appearance of stagnation.

Dropsies too are said to be owing either to venous or lymphatic obstructions; but it is disputed

disputed how far the brain is supplied with lymphatics, and whether absorption is not performed here by veins. This regurgitation of the blood then is distinguished, as it acts either by effusion, or whilst confined in its vessels. This last is too little attended to ; for oftentimes it may occasion an obstruction and compression without any effusion. In effusion, the whole substance of the brain is generally acted on ; and it takes place, not only in the ventricles, but every where between the cortical substance and pia mater. In the present patient, an effusion was found, which was deemed a sufficient cause of this disorder ; but there is reason to suspect, that this had not been lodged there for any time ; so that the disorder might proceed from an accumulation in the vessels before this took place. The brain was not examined to prove the certainty of this ; but, from the thinness of part of the squamous portion of the temporal bone, it is probable that there was a tumour in the anterior lobe of the brain. That this might make the bone thinner, appears from the marks on the cranium by the compression of the vessels. Such was the state of this patient. How it produced the particular symptoms of head-ach, mania, convulsions, paralytic affections, &c. is difficult to explain, and would lead us into too subtle a disquisition at present. We shall therefore only sub-

join a few remarks on the practice we used. From the appearance of his face, &c. we judged it to be a topical affection ; but from its frequently recurring, we concluded that it had subsisted a long time, and was grown to a considerable degree.

The prognosis therefore was very unfavourable. In all such cases where the *causa proxima* is so little understood, we must act much at random. One of the most probable views was, to draw off the accumulated blood from the vessels of the brain, and to prevent any such accumulation for the future. Here it was an accumulation of serum or watery fluid ; for, from the paleness of his face, we could not suppose it to be of red blood. We proposed then to try blisters or purgatives. Blisters must be proper here, in whatever light we view them, either as stimuli, evacuants, or antispasmodics. At first they gave some relief, but were not equal to the disorder, and when repeated had less effect.

Purgatives are a general remedy in hydroptic cases, and particularly those of the brain ; but we were prevented from the use of them by a spontaneous diarrhoea, probably owing to a palsy in the intestines. This ceased before death, when the palsy had affected the vessels of the intestines, the laxity of the secretaries occasioning it.

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WE shall next speak of ANN Hood, labouring under a violent head-ach. This is one of the most frequent symptoms in pathology, and is of very different natures. It may be distinguished as being either idiopathic or sympathetic, that is, a disorder or a symptom. When it is to be looked upon as the one, and when the other, is uncertain. We shall at present speak of it only as idiopathic. This is a very difficult subject, owing to the frequency of the disorder, and the various circumstances and different forms it appears in. Boerhaave has not given it a place in his system, nor mentioned it in his treatise *de nervorum morbis*.

In the first place, we must enquire what cases of the head-ach are properly idiopathic. Galen, Aretæus, and the followers of the ancients, and among the moderns particularly Stahl and his disciples, have distinguished these into four kinds, the *cephalalgia*, *cephalæa*, *clavus*, and *hemicrania*. But they have not made any steady distinction; sometimes distinguishing them merely by the degrees of violence or duration, oftentimes by the place they occupy, and often by the modification of the pain. But these we shall find to be no proper

proper distinctions. We could indeed expect them to be considered in this light, only since physicians began to examine more accurately the various genera and species of disorders, as has been done particularly by Sauvages. He excludes one of the genera established by Galen, the *clavus*, and constitutes only the other three. The great fault of his works is, that he constantly enumerates symptoms as species; and nowhere perhaps more improperly than in this disorder, of which he has made no less than thirty different species. Of these we must reject all those that depend on some primary disorder, as the *cephalalgia inflammatoria*, whether it be an inflammation of the brain itself, or of its membranes. On the same footing we reject all those depending on a fever, whether continual or intermittent, as the *cephalalgia febrilis* and *intermittens*, *cephalea febricosa*, and *hemicrania lunatica*. But we must observe here, that every exactly periodical head-ach is not to be referred to the *cephalalgia intermittens*, and doth not always depend on the same cause. It is therefore doubtful whether Sauvages is right, in assigning the *hemicrania lunatica* to the general intermittent fevers.

We likewise reject all those arising from a topical inflammation of the contiguous parts, as the *cephalalgia catarrhalis*, the *hemicrania*, *odontalgica*,

odontalgica, sinus, coryxæ, purulenta, and ab insectis. It is much that he did not add, the *otalgia* to all these, as being of the same nature. Of this other species, the *cephalæa polonica* or head-ach, depending on the *plica polonica* being improperly cut, is not to be admitted as he explains it. We reject also all those which depend on causes not more peculiarly affecting the head than any other part: this is the case in the *cephalæa syphilitica*, which is no more a disease, than an affection of the skin from the same cause is; as also in the *cephalæa ab acrimoniâ*, proceeding from the scurvy. Neither of these give any particular disease, much less an idiopathic primary one.

Under the *cephalalgia inflammatoria*, Sauvages observes, that this is of the same nature with those arising *ab ictu, vulnere, or any other external injury.* He has not made any distinct species of those; but if he had, we must have rejected them; perhaps, however, these may occasion such a state of the brain as may produce proper idiopathic head-achs. We have now rejected about one half of the species he establishes, but must still proceed to reject others, as the *cephalalgia pulsatilis*, depending on a slight variation in symptoms only, and *anemotropha*, on a slight variation in the cause.

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It is not easy to determine, how far we may establish species from external or remote causes; but if we admit this species from a change of wind, we must also admit several others, as from the heat of the sun, &c. Lastly, the *cephalæa forasa* is to be rejected, as being founded on internal, and not very evident causes. In the next place we must observe, that it is very doubtful how far some of his species are to be looked upon as distinct from each other: thus the *cephalalgia plethorica*, *catamenialis*, *hæmorrhoidalis*, seem to be all the same species; and, perhaps, the *cephalalgia gravidarum* too is to be referred to the *plethorica*. The *hemicrania hæmorrhoidalis* and *cephalalgia hæmorrhoidalis* are certainly one species only.

It may be disputed too, whether the *hemicrania clavus* is a distinct species. Again, there is the same doubt with respect to another class, as the *cephalalgia hysterica*, *cephalæa arthritica*, *hemicrania nepralgia*, &c. Whether these and the others are distinct species, or whether they are all the same species, we shall consider hereafter.

At present we shall suppose a species properly idiopathic, and one that seems most general, and give its history, or at least its general state. We shall be liable here to the same

same inaccuracy which most physicians are guilty of in describing genera rather than species; and it is very difficult to avoid this.

We shall begin with observing, the particular temperament it is apt to affect: this is the sanguine, or rather the sanguineo-melancholic temperament.—This may be distinguished by the following marks; as black hair; a more lean and firm habit; a ruddy, but withal a brown complexion, with large veins, and abstracting from the ruddiness of the cheeks, with a skin pale, but smooth and soft. This is distinct both from the sanguineous and melancholic temperament. The disorder frequently attacks the purely sanguineous, and no less frequently the purely melancholic temperament; it affects young persons more than old, but oftener about the acmè than any other time of life.

It often continues a long time after, but seldom arises in elderly persons: it is more frequent in women than men, in the proportion, perhaps, of ten to one. As to the time of its attack, it is a disorder of all seasons; if it is more general in any one season than the other, it is in the spring. Such are the predisposing causes of this disorder. As to its occasional causes, it arises in many persons without any observable ones; and where it is

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exactly periodical, we can scarcely suppose any occasional cause constantly recurring ; though, in the *hemicrania lunatica*, the state of the moon seems to be such a cause. There are, perhaps, few disorders which act by paroxysms, that do not depend on occasional causes ; and though the patient may not observe these, they may be found out by diligent inquiry. To find these out, is one of the most important things in practice ; and they really exist always, though sometimes very difficult to be discovered. This is very observable in the head-ach, where the slightest changes in diet, exercise, temperature of the air, &c. are sufficient to bring on the disorder. We can mark a great number of these occasional causes ; but it is difficult to enumerate them, and still more to arrange them in proper order. The first we shall mention is the plethora. This is a frequent cause, and should, indeed, have been marked as a predisposing cause, as it was in fact, when it was observed that the disorder frequently prevailed in a fanguine habit.

We mention it here, because whatever increases it, may be an occasional cause of the head-ach ; such as the fulness of diet, an obstruction in any evacuation, either natural, as menstruation, &c. or spontaneous, as hæmorrhages at the nose, &c. Thus the head-ach generally

generally prevails at the beginning of menstruation. To this article of increased fulness in the body, we may add costiveness, which often accompanies this disorder, and when extended to a great degree may produce it.

Perhaps we may join here, cold applied to the extremities, whereby perspiration being obstructed, will excite fulness in the vessels, and particularly in those of the head. Again, there are other causes which act in producing a temporary turgescence and rarefaction, such as being kept in any great degree of heat, and particularly, being exposed to a hot sun, &c. or a change of weather from cold to hot, from heavy to light, and dry to moist; also whatever increases the impetus of the blood, and quickens the circulation, will have the same effect as a distension of the vessels, and may be an occasional cause. Such is violent exercise, and some of the passions, particularly anger. Those exercises too may be occasional causes, which do not excite an impetus of the blood over the whole system, but stop the reflux of the blood from the head, by preventing its free passage through the lungs, and thereby causing a regurgitation; as much and loud speaking, violent laughter, coughing, vomiting, &c. On the same cause, perhaps, but with a greater degree of obstruction, depends

the head-ach, which commonly proceeds from fits of the spasmodic asthma.

To these we may add another set of occasional causes, quite different from the former, and, perhaps, directly opposite. Of this kind are sudden fear, sudden grief, and particularly any subject of anxiety. To these we may add excess of study, not only such as is keen and intense, but that which is long protracted and accompanied with watchings. This last is a frequent cause ; and yet not less frequently the head-ach is occasioned by too much sleep, and, in some people, even by the ordinary sleep : sleeping at unusual hours, as in the afternoon, is very apt to bring it on ; an abstemious way of life is another cause ; and we have known several instances of persons cured of the head-ach by using a fuller diet : it may also be occasioned by evacuations, if too large and too long continued.

We mentioned above, that the head-ach frequently proceeded from obstructions of some usual evacuations ; yet it arises no less frequently from too copious evacuations, and none are more subject to it than women with too copious a menstrual flux, or men with an haemorrhoidal flux : in this case it attacks women at the going off of menstruation, as in the other it did in the beginning. In short, there

there are instances of its being occasioned by every thing that weakens the body. One of the most frequent causes is the application of cold, particularly to the head, and this is relieved by warmth : to this we must add, riding in the wind ; but whether this is merely from the same cause is uncertain. Again, various odours, whether fragrant or fetid, will sometimes produce the head-ach ; wine too will have this effect, either when taken in such a quantity only as to heat the body, or after intoxication ; opium will, in some persons, produce similar effects, and probably other narcotics, and among these the metallic. This is more evident in arsenic and mercury than any other. All strong impressions on any of the senses, as violent noises, strong light and odours, may also be occasional causes. There are some other circumstances more difficult to be explained. Thus, whatever produces vertigo, as looking upon a stream of water, or from a great height, will often occasion the head-ach. Whether these occasion slight temporary head-achs only, or the proper idiopathic ones, is not certain ; but we should imagine, that the last is the case. We are next to speak of the proper form, in the series and combination of its symptoms. This is commonly called the history of the disease, though that comprehends

hends the predisposing causes, as also the occasional and the remote, the symptoms and effects of them. The head-ach sometimes seizes suddenly and with great violence, but more commonly comes on in a more gradual manner. In this last case, it often begins with a sense of weight, as if there was a leaden cap on the patient's head ; oftentimes with a sense of turgescence and fullness ; often too with a stiffness and constriction about the head ; frequently there is a sense of cold about the head, or perhaps, an affection of the skin and hairs, which become more or less bristly. The disorder beginning generally with one or other of these symptoms, changes to a more formal and fixed pain : this, again, is of various kinds ; frequently a kind of soreness is felt over the skin of the head, such as is usual after any great fatigue, and what is called, by some authors, *laſſitudo ulcerosa* ; sometimes there is a sense of fulness, as if something was constringing the head, or violently distending it. These two are often confounded together, as they somewhat imitate each other. Oftentimes there is a more piercing pain or tenebris, as if a nail was thrust into some particular part. All these are attended with a strong pulsation in the temporal arteries, and in the other parts, and which is even perceptible by

by the eye. These different feelings of pain are again distinguished as they are more diffused or definite; generally they are limited so as to affect one side more than the other; they are often situated over one eyelid, as also upon the summit of the head, but more towards its anterior part; frequently they are confined to the temples, or perhaps to the temporal muscles; wherever they fix, they are more gentle at first, but gradually become very violent. This is commonly attended with a sense of heat; often the face becomes turgid and ruddy, but not with an uniform redness, but discoloured with red spots; sometimes, however, it is without any of this turgescence, redness, or bloatedness, and the whole countenance is pale and cold. When these pains are very severe, and continue for a long time, the eyelids fall, tears flow involuntarily, the eye is effused, and the *albōginea* more or less inflamed, and vision becomes obscure, or is entirely destroyed. Commonly, there is more or less vertigo added to these symptoms. The ears are also affected, as they have a sensation of various noises, as of storms of wind, rushing of waters, *tinnitus, &c.*

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Oftentimes too the smell and taste are affected, and almost destroyed. But we must observe, that, instead of these symptoms, there is frequently an increase of sensibility, so that the smallest light, or gentlest noise, disturbs them. The internal senses are also affected, the memory is impaired, the imagination incoherent, and, from a want of attention, the judgment is disturbed. Sometimes it produces a *deliquium animi*, though not very frequently. It often is attended with bilious vomitings, and commonly with a costive belly, and paleness of urine. After all these have continued for some time, a stupor and sleep come on, which terminate the fit.

AS to the state of the pulse, oftentimes, even in violent and long-continued head-achs, it is not sensibly altered from its ordinary state. In other cases it is altered, and very variously, becoming not uncommonly less frequent than before. In other cases it is not changed in its frequency, but becomes fuller during the paroxysm, especially in the parts affected, whence arises the throbbing and perceptible pulsation,

pulsation, accompanying this disorder. But sometimes this fulness is also accompanied with an increase of frequency.

We mentioned the different states of the temperature of the parts; and the connexion between this and the state of the pulse is very discernible. Thus, where there is a sense of cold with a pale skin, the pulse is either less frequent, or, at least, is not increased in that respect. Where there is a heat in the part frequently accompanied with swelling, and with more or less redness, the pulse is more full and frequent. We have now spoken of the form of the disease, and shall only add a few general remarks upon this form. The paroxysms vary in the degrees of violence, duration, and period. They come on at different times of the day; as, in some, in waking in the morning; in others, at noon, or soon after meals; frequently in the evening; and in some persons, after going to bed, and towards midnight. They differ also greatly in their duration, continuing for some hours, sometimes for days. They have almost always a remission, and return at a certain interval, which in some are exact, in others very irregular. Of

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the exact intervals there is also great variety, some returning daily, others in a tertian form, some monthly ; others again, annually.

The consequences of these head-achs, are frequently one or other of the various disorders of the head, as oblivion, satiety, and mania. Oftentimes they end in the epilepsy, palsy, or apoplexy : sometimes they fall upon the exterior parts of the head, affecting the senses and their peculiar organs, as the eyes, with more or less suffusion, and often with an *amaurosis* or *gutta serena* ; and also the ears, impairing or destroying the sense of hearing. A common effect, where the pain is situated over one eyebrow, is to leave that eyelid paralytic. Frequently the temporal muscles are affected with a palsy or atrophy. Such are the chief effects of an idiopathic head-ach.

The state of the body under this disorder, would be best learnt from examining it after death. But it rarely happens that a person dies after the head-ach, without some other disorder of the head supervening, as the palsy, epilepsy, &c. and then, upon examination, we find the same state of the parts as after those disorders. Thus we meet with topical affections,

tions, as tumours, abscesses, various erosions, marks of accumulation, stagnation and effusion of blood, and serum in the brain. It is not certain, whether these are causes or effects, existing previously before the head-ach, or both these; and those supervening disorders being the effects of the head-ach frequently recurring. Either of these is sufficiently probable; and sometimes one, sometimes the other seems to take place.

In head-achs of very long duration, it is difficult to conceive any primary topical affection of the brain, so that these must often be the effects of the head-ach: yet instances of such topical affections have been found after accidental deaths, and such as were not immediately connected with the head-ach; which seems to shew, that they sometimes exist before the head-ach.

In order to judge here what are the proximate causes of the head-ach, and how it may operate in producing these topical affections, or the disorders attending it, we must enter into the theory of the disease.

In the first place, the head-ach may proceed from simple fulness, and the distension occasioned thereby, which gives the *cephalalgia plegmatis*.

thorica. Thus we see it manifestly arising from all the causes which produce or encrease a fulness of the blood-vessels, which occasion a temporary rarefaction, or which determine the blood in a greater force, or in a large quantity to the vessels of the head. This is sufficiently explained by the occasional causes of their disorder, which we have already mentioned : we shall only illustrate it by a single instance of a person who laboured under an *ascites*, founded on osteomatous tumours, occupying a large portion of the abdomen ; this compressing the blood-vessels, produced many various swellings in the vessels of the lower extremities, and a constant fulness in the veins of the head, so as to occasion violent head-achs ; in particular, any stooping brought on head-ach, dimness of sight, giddiness, stupor, partial paralytic affections, and sometimes formal fits of the apoplexy, lasting several hours. This shews how the head-ach may frequently be produced by various inclinations of the head. This is the most simple view of the head-ach, as depending on plethora, which is often slight and transitory, though there is a variety in this respect according to the cause. Thus, even in this plethoric state, when there is a greater tendency to hæmorrhages, there are
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more formal paroxysms of the head-ach.—Hæmorrhages are commonly said to depend on a fulness, and increased impetus of the blood in the system, and, perhaps, on a particular debility in those vessels in which the rupture takes place. But this notion of spontaneous hæmorrhages, is not correct; and to explain the nature of them, we must have recourse to Hoffman, who, in his chapter upon the hæmorrhages of the nose, tells us, that they are begun by a spasm, or stricture of the vessels of the extremities, whereby the impetus being increased in these vessels in the head, the blood bursts. But this will not be understood, without being acquainted with his doctrine of fevers.

There is another case depending on a rheumatic affection, or the same with that occurring in rheumatic affections of other parts. Here there is an increased impetus in vessels not suited to hæmorrhages, as being inclosed in the membrane of the muscles. To understand this, we must look into the writings of the Stahlians, who tell us, that they are *congesta completa et incompleta*, the former of which answer to the proper hæmorrhages, and the latter to the rheumatic; so that in both they suppose there to be the *mollimina hæmorrhagica*, and an increased impetus.

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This doctrine, with a little improvement, would be very just. What the difference in the state of the vessels is, we shall not explain at present. Besides this, there is, perhaps, some difference also in the causes of each. But however this may be, it is certain that there is a paroxysm of the head-ach of the rheumatic kind: there is likewise another of the arthritic kind, which is also another of the congesta. How far this differs from the rheumatic in topical affections, is difficult to explain. It differs however in this, that arthritic arises from an interruption of the usual determination of such arthritic affections, and is relieved by their return. There is a fourth case depending on a topical fever.

Intermittent fevers, during an epidemic period, often operate solely in producing head-achs. Perhaps then we have head-achs precisely in the situation of intermittents, with this difference only, that they are topical instead of general. Whether there are not topical fevers of other kinds, which are the foundations of various head-achs, is not determined, but seems probable. These four species appearing in paroxysms, are all analogous; and in proportion as a person is acquainted with the doctrine of fevers, will he understand the state of these head-achs, and their proximate causes. They begin with a

cold

cold fit, or with symptoms analogous to it; such as, a general *horripilatio*, and a sense of coldness in the part, which is frequently succeeded by a hot fit, shewing at least an increased impetus in the part itself. Sometimes this is communicated to the rest of the system, and produces a more frequent pulse. They terminate also like fevers, with haemorrhages, sweatings either in the part itself, or more generally; and oftentimes tumours of a particular part, as in the rheumatism. Frequently they are without any sensible resolution; but this also happens in many fevers.

The principal head-achs, then, we refer to topical fever. As in other fevers, so here is a cold and hot fit in various degrees. In some fevers there is only a cold fit, which immediately kills the patient; in others it is succeeded by a hot fit, and this having various proportions to the cold fit, and with various resolutions.

These fevers of the head-ach are also of different kinds, and mark out the different prevalence of the cold and hot fits. To explain this, we must make a few remarks upon the nature of pains. There are some pains depending on a stimulus, or some acrid matter applied to the part: but as this is common to every part of the system, we shall omit it here, and only take notice of those pains which are more immediately

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connected with the vascular system, and occur in the extremities of vessels. These are of two kinds, one of which proceeding from distension, and which occurs in the plethoric head-ach, is well understood, and perhaps the only one generally thought of. The other kind of pain is analogous to an external force compressing and constricting the nerves; and perhaps of this kind is the pain arising from spasmodic constrictions. Such too is the pain arising from cold: this condenses all bodies, and constringes the extremities of nerves; but whether it acts merely thus, or produces spasmodic constrictions, is difficult to determine. Such constrictions do arise from cold, and are relieved by heat: thus many head-achs are accompanied with a sense of cold; and there are instances of the same in other parts, as in particular joints, which are only removed by restoring the impetus of the blood to them; and though this causes a distension, it cures them. This pain then appears to be opposite to the distending pain, which occurs chiefly in attacks of the head-ach and fevers, and often in chronic rheumatisms. In several instances of the head-ach, these two points are more or less mixed: thus in the febrile head-ach itself, the pain coming before the cold fit, or accompanying it, cannot be of the distending kind, but must certainly

tainly be the constricting ; as there is then every proof that the blood is not impelled into the heart with the same impetus as usual. These pains thus differing, as they recur at different periods of the head-ach, are often connected with each other. Thus the distending pain, as in hæmorrhages, by occasioning spasms, lays the foundation for the constricting ; and the constricting pain, when produced, proves a stimulus, and occasions the distending, as in fevers, inflammation, &c. When the distending pain has continued in a part for any time, it leaves it in a state to be affected by the constricting. Thus acute rheumatism is often attended by the chronic, and this by the palsy. This is often propagated to the origin of the nerves ; so that other parts are affected, as being connected with the *sensorium commune* : but these pains are often separate, and the constricting is frequently found alone.

As the head-ach proceeds from various causes, either of these different states may prevail : thus, on the one hand, various causes produce paroxysms of the distending pain, which were marked out among the occasional causes, under the titles of fulness, temporary rarefaction, and determination to the vessels of the head. On the other hand, the constricting pain is occasioned by cold, and all weakening causes ;—by

the passions, as by fear and grief; by watchings, study, evacuations, abstinence, and all such as diminish the force of the nervous power, or, by an external application, bring on a constriction of the part. This pain thus produced, does not always prove a stimulus, or bring on the distending pain. What has been here said, will explain the various causes of the head-ach.

In the febrile there is a more certain paroxysm; in the rheumatic, it is longer, and more uncertain. With regard to the head-ach depending on a topical fever, a question may arise, what species of fever it might be, and when it properly partakes of the nature and genius of an intermittent. Sauvages has been so exact here as to distinguish both a *cephalæa* and *hemicrania* intermittent, though there are several other periodical species. This, when discovered, leads more directly to the method of cure, and shews when the bark may be properly applied.

To distinguish then what periodical head-achs immediately partake of the nature of an intermittent, the following considerations will be of service, as, 1. Whether any intermittent is epidemical? then, 2. Whether the climate is subject to these epidemic intermittents, though they do not actually prevail at the time? 3. Whether it is the usual season of the

year for such, as spring and autumn ? 4. If the patient has formerly laboured under a head-ach, as connected with an intermittent ? Thus, a person who had before been cured by the bark of a periodical head-ach, which he had during an epidemical intermittent, on its returning, was cured of it on the footing of an intermittent. 5. At what period these head-achs return ? If it be a quotidian, it is more ambiguous ; but if tertian, we may judge with more certainty. 6. What is the time of their coming on ? If it be in the evening, they have less of the nature of the intermittent, which is more common at noon, or in the forenoon. 7. Whether these returns are strictly periodical ? for, in a proper intermittent, they are usually more or less postponed. By these means we may in some measure judge, how far they partake of the nature of the intermittent.

There are some symptoms which exclude this intermittent nature, as when we discover the head-ach to be connected with any particular viscus, or other parts of the body, as with affections of the stomach, flatulency of the bowels, arthritic fits, &c. When we discover the head-ach to depend on occasional causes, and to have its intervals varied by these, there is great reason to suspect that it is not of the proper intermittent kind, though it is not a certain proof. For

the occasional causes do take place in intermit-
tent fevers, yet these are wonderfully steady in
their periods, independent of such causes. We
must now add, that besides the principal idio-
pathic head-ach, which may be looked upon as
a topical fever, there are other kinds, which we
know not where to refer. Such is the *cephalalgia*
melancholica, which is often accompanied with
dimness of sight, vertigo, &c. and succeeded by
epilepsies, apoplexies, palsies, and often too
with mania. This has a manifest connexion with
the stagnation of the blood in the vessels of the
brain, and is particularly prevalent in the melan-
cholic temperament, and so depending on a
plethora in the venous system. Whether it is
purely plethoric, or depending on a febrile
paroxysm, has not been determined; but it seems
rather of the first kind. It doth indeed appear
sometimes in fits of a topical fever; but such in-
stances are very rare. Its occasional causes may
perhaps be referred to these two heads, 1. such
as hinder the reflux of the venous blood from
the vessels of the head, as stooping, &c. 2. what-
ever weakens the system, and diminishes the
impetus of the nervous power. Thus melan-
choly, hypochondriasis, and such others, will
excite occasional fits of this head-ach, for it is
seldom periodical. What is its particular na-
ture, has not been determined.

Another of these species of head-achs, which cannot easily be referred to the principal idiopathic, is that connected with the menstrual or hæmorrhoidal flux, and called *cephalalgia catamenialis & hæmorrhoidalis*. The coming-on of the hæmorrhoidal flux, is not exactly periodical, and is often foretold by this head-ach.

The notion which would most readily occur here is, that the plethora is owing to some resistance made to the blood, as it endeavours to pass off by these vessels, whereby it is made to regurgitate on the brain. But this is liable to many difficulties ; and all the arguments brought upon the question, Whether the plethora of the menstrual flux is universal or topical, against an universal plethora, will apply here.

Still, however, the menstrual and hæmorrhoidal flux are to be looked upon as topical fevers, founded on a turgid state of the vessels of the uterus and anus : even a moderate turgescence here, without a plethora of the other vessels, may excite a painful tension in other parts of the system, and promote the impetus in them ; and it accordingly doth so. Thus, when the menstrual flux is obstructed, it is sometimes determined to the lungs, sometimes to the stomach, and may easily be so to the head ; independent of any general plethora.

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There is, indeed, either something particular in the vessels of the head, or it is in consequence of its communication with the *senorium commune*, that the head is so much affected in all fevers. But why it is so, has not been yet fully solved. Taking the catamenial and hæmorrhoidal headaches, then, in this view, as topical fevers; we may observe, that there is a head-ach, which often follows these discharges, when they have been remarkably plentiful. This, then, cannot be of the plethoric kind, but of the constricting. Besides these, which are doubted concerning their being topical fevers, there is another species, which has been so since Riverius, the *cephalalgia stomachica*. This is explained by consent, which we shewed before, not to depend on any connexion between the nerves and the two parts, but upon an impression made on one part, and communicated to the other, from a particular aptitude in the last to receive such: thus, the different states of the stomach are found to affect the head, and may undoubtedly be the foundation of the head-ach.

The stomach has a particular connexion to the nerves, all over the system, whence it is so much affected in all fevers. Crudities of the stomach are frequently found to bring back an intermittent

intermittent fever, after it has once ceased; and perhaps, too, to give rise to it: we may conclude, then, that the same state of it may bring on the head-ach. There is another case of a stomachic head-ach, where, from a change of the determination to the uterus, the stomach is affected; and this may be translated to the head, with this effect, that the pains in the stomach and head become alternate with each other. Thus they may continue in the stomach for some days, and then remove to the head, and the stomach will be relieved: thus in a case of a head-ach, accompanied with an inflammation in the eyes, this inflammation, and the pains of the stomach, alternated with each other.

Besides these species of head-achs, which seem doubtful, there are others which are not at all of the febrile kind: such are those depending on more particular topical affections of the brain, or stimuli, such as tumours, and so various erosions: these produce head-achs of a permanent kind; but as they are liable to be increased by occasional causes, they may have exacerbations, and so appear almost periodical, coming on at a particular time of the day, as towards the evening.

These last lead to a question, Where the pains
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of the head-ach are properly felt? Sometimes their seat may be internal; but, without doubt, it is more commonly, even in this last species, in the external parts. We have sufficient instances of this, and one in particular, where the patient had complained long of a pain in the crown of his head, in whom, upon dissection, there was found a considerable erosion at the basis of the head. Thus, in an epileptic patient under our care, where there is every reason to suspect a topical affection of the brain, the pain is in the vertebræ, which cannot bear the slightest touch. It appears, also, from the effects of compression, in aggravating or relieving the symptoms. How internal affections affect the external parts, is not known; but certainly there is a particular connexion between the internal and external parts of the head. Thus, wounds that affect only the common teguments of the head, will often produce violent head-achs. As this shews how the external parts affect the internal, so the proposition is easily convertible.

It may be asked, why the pain is circumscribed in the external parts, as it generally is to the vertex, or temporal muscle, or over one eyebrow. Our anatomy is scarcely carried so far as to enable us to give a solution to this problem.

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We must look upon the frontal and occipital muscles, as a digastric, the intervening tendon of which, and that of the temporal, are the chief seat of the pain. The pain, then, here we look upon as analogous to the rheumatism in other parts, which doth not seem to reside in the bodies of muscles, but their tendons. Thus, in the *sciatica*, though the pains fly across the muscles, they are only violent at their extremities, as from the hip-bone to the knee, and from the knee to the ankle. Haller, indeed, supposes these tendinous parts to be insensible; but this seems not to be the case.

When we are able to explain the above phænomenon, and why the electrical shock is only felt at the joints, we shall then, probably, understand the reason of the head-ach, having its seat so circumscribed. Before we proceed to speak of the method of cure, we must mention an observation of Lieutaud, on this disorder. He says that he cannot lay down any direct plan for the cure of it, but only mention what medicines have been used for it. What he observes of this, is the state of empiricism in every disease.

It is easy to perceive, that there must be different methods of cure here, adapted to the

nature of different species. In the simple plethoric head-ach, immediate relief may be given by bleeding; but its effects are only transitory; and, if often repeated, it may be hurtful, as frequent bleeding is equally apt to bring on a return of the plethora, as the most plentiful diet is: it should, therefore, be used with caution, and along with it may be employed abstinence, and moderate exercise, to prevent any accumulation for the future, by supporting the usual discharges. But it seldom happens that head-ach, which subsists for a long time, is purely plethorical; it should therefore be treated as a topical fever, but variously, according to the various circumstances of it: these, whether exactly periodical or not, have their intervals and returns, and to prevent these returns is the chief business of the physician; these are often owing to a plethoric state in the vessels of the head, either in consequence of an universal plethora, or a particular determination to that part. Where this is very evident, and the fever produces a hot fit, attended with an increase of heat, a frequent pulse, or only a full one, with throbbings, there the cure is to be found only in blood-letting.

When there are only presumptions of a plethora,

thora, regard must be paid to circumstances, as, if it occurs in young persons, in the spring season, &c. In general, bleeding should only be used, where the plethora is evident. Topical bleeding is most proper, as by leeches, or cupping-glasses. If it is thought proper to open a vein, it will be more proper to open the jugular than that of the arm: but here, too, we must observe, that the effects of bleeding are only temporary. A more effectual remedy is the use of purgatives: these have not such an immediate effect in taking off the plethora and diminishing the heat, though they do this too; but they may be more safely repeated, and so are more permanent, and have a peculiar advantage, in causing a derivation from the head. The head-ach has, accordingly, been frequently cured by moderate, but habitual laxatives.

If valerian ever cured this disorder, as has been asserted, it was by acting as a laxative, of which we have several proofs now in this house: accordingly, there are two instances mentioned by Dr. Fordyce and Dr. Whytt, in which valerian cured the head-ach, by being given in a large dose, as 3ii or 3iii a day. There is another remedy, which is somewhat analogous to this, in deriving from the head, a pediluvium;

for, by relaxing the lower extremities, it takes off the tension from the vessels and membranes of the head.

But the most effectual remedy, either in a more general or partial plethora, especially in young persons, is a low diet, consisting chiefly of vegetables: keeping up a proper perspiration at the same time, and equable determination of blood by moderate exercise. These act more generally upon the system. There are others acting more topical on the head; such are blisters, as acting either by evacuation only, or by removing the spasmodic affections, which are the foundations of the disease. Issues are also of considerable service, if we consider the nature of the matter evacuated by them, which is the coagulable lymph: these, then, keep the vessels more relaxed and empty; they are also ready as outlets to carry off any superfluous matter, in case of any unequal determination to the part. The nearer they are to the part, the more effect both they and the blisters must undoubtedly have; though they may be of service, too, at a greater distance. In all cases of congestion and determination to the particular parts, relief may be obtained by increasing the contiguous secretions, as here of the mucus of the nose:

nose: this is the foundation of the application of sternutatories, and particularly of the asa-rum, which may be managed so as to cause a secretion of the mucus, with the appearance of pus, and then it is often an useful remedy. These remedies are proper where the returns depend on a particular turgescence of the vessels of the part.

When there are symptoms of a cold fit approaching, other means should be used to prevent its return. If it comes at a considerable interval and exact period, the bark is most proper. Where the head-ach has any of the properties of the intermittent fever, which has been already mentioned, it is almost the only thing to be depended on. But there are other cases somewhat periodical, where it may be hurtful, as in those above, depending on a turgescence, either general or particular: hence, it is not thought safe to give the bark in vernal intermittents, lest it should excite inflammation; for it will, perhaps, prevent the cold fit, but not the determination of the blood to the parts, and the increased impetus occasioned thereby.

When the bark is employed in the head-ach, it must be given in the same manner as in an intermittent, in large doses, and near the approach

proach of the fit. Where the bark is used, the use of evacuations, low diet, &c. is excluded, as is the case in other intermittents. Besides the bark, opium is a means of preventing the return of these fits. It has been tried with and without success, and sometimes with bad effects. There is a dispute concerning its use in intermittents, between Lieutaud and Storck ; and as it is proper or improper in them, so must it be here. A third means is, by exciting an artificial fever, by promoting a determination to the surface, or even bringing on an actual sweat : this is done by emetics and other sudorifics, and particular stimuli. This is the foundation of the use of volatile alkali ; thus, large doses of sal corn. cerv. have been found to prevent a return of the fit. Emetics and opium combined have often been of service, as in the case of Dover's Powders.

We have now shewn the proper idiopathic head-achs to be paroxysms of a topical fever. These we have divided into two kinds ; one, where the paroxysms are occasioned by a more copious determination of the fluids to the parts. This, we said, was to be obviated by avoiding and removing this increased impetus, for which purpose we recommend the use of various evacuations ;

cuations; the other kind was, where the fit is not excited by any remote cause; but the plan of cure must turn, on obviating the return of these fits.

Where they are exactly periodical, they must be treated as other intermittents, with bark or opium: but there is also another method, which we mentioned, as often followed, either when the fit is periodical, or not exactly determinate; and this is the use of emetics and sudorifics, or both combined, as in the case of Dover's Powder. There is a third case still remaining, of those which properly appear in the paroxysms of a topical fever, but have the cold fit more considerably prevailing: the method of cure must here, too, turn on preventing the return of the fits in general; every thing is proper, that tends to invigorate the system, as bark, bitters, chalybeates, exercise, &c. But, further, these require a particular consideration of occasional causes, and of the means of avoiding them: these may be referred to two general heads, one of which is cold, one of the most frequent occasions of the paroxysms of this kind of head-ach. The common way of preventing this, by warm coverings, is very precarious; for the

utmost exactness is requisite in keeping them on; and the least neglect of this, exposes the patient to the effects of cold; besides this, they are seldom effectual, so that the patient is always wanting an addition to be made to them.

A much more effectual method is cold-bathing, which has often proved of service, after warm coverings, and other such things, have been tried in vain, by enabling the body to resist the cold air, when applied. The second general head turns on avoiding every thing which may weaken the system, as abstinence, evacuations, &c. In this kind of head-ach, two topical applications are more particularly admissible during the fit.

In hot fits of the head-ach, warm applications rather aggravate the pain; but cold applications have been thought useful in this case: these, however, are precarious, and even of dangerous effect; for, by preventing the increased impetus, they often increase the force of the determination to the part. If they should happen, too, to correct the fit, they may perhaps change it to some more dangerous affection of the brain: thus a paralytic affection of the external parts, as particularly of the eyelid,

lid, is often the consequence of cold applications during fits of the head-ach. None of them are proper in a hot fit; but, in a cold one, warm clothes, fomentations, warm bags, &c. often give much relief. Their use seems to be confined to such cases, where strong odours are of service. Thus, in a cold fit, the volatile or even caustic alkali, as in the *eau de luce*, is very useful, or spirits of wine, as Hungary water. There are some other external applications peculiarly adapted to these fits, as æther, which is perhaps only proper here. It acts, not only as an antispasmodic, but, by exciting heat, and a swelling of the part: and, if it has not this effect, it is seldom of any great service. The usual way of applying it, is to put a little of it in the hollow of the hand, and hold it to the pained part, till the glowing heat is removed; but it is apt to escape from the hollow of the hand; so that it is better to dip a little ball of cotton in æther, and apply it to that part, covering it with one's hand, or with a bladder between one's hand and the forehead. Warm applications, stimuli, antispasmodics, &c. may also be used: thus, the essence of lemons, with vol. alkali, is often of equal service with æther, and was accordingly frequently used by the late Dr.

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Ward.

Ward. All these are improper in the hot fit, in which topical bleedings are the most sure method of relief. A pediluvium may be of service here, as also a glister, in taking off the impetus of the blood to the part, and in promoting a relaxation: these are the principal remarks we had to offer, on the proper idiopathic head-ach.

The sympathetic head-achs, as those depending upon the gout, on the state of the menstrual or haemorrhoidal flux, &c. must be referred to those particular subjects. Omitting, therefore, all these, we shall proceed to give some account of those our patients who have laboured under head-achs, beginning with ANN HOOD.

The first account of her symptoms, seems greatly aggravated, with regard to the severe racking pain, and constant head-ach; for, from the sense of cold she felt, from her former ailment, shewing a debilitated system, and from the more particular account of her symptoms, obtained since, it plainly appears, that her head-ach is of the last species mentioned, in which there are paroxysms; but that of the cold fit chiefly prevails. Here, however, there appears some little degree of the hot fit, as the cold one terminated in a swelling in the eye, and that part of

the head. Her complaints first arose from a suppression of the menses, and were relieved by their return at first ; but they have never since returned properly. The suppression and imperfect flow afterwards, produced some hysterical complaints first, which have since turned out mere simple complaints of the stomach. These complaints have a particular connexion with the month of August, having returned three years successively at that period. This is difficult to be accounted for, but will admit of her conjectures : one is, that it is owing to some particular circumstances attending that month, known from other considerations, as of the dysentery and *cholera morbus* ; the other is, that the complaints came on accidentally, at first, at that period, but afterwards formed themselves into an annual period. The determination to the uterus, being first suppressed, and afterwards much diminished, was first turned to the stomach, and then to the head : this last is only to be looked upon as a translation ; for the stomach, then, was not so much subject to its former complaints. The constant costiveness she laboured under, was a symptom of the less determination to the descending aorta, or of the weakness of the system in the alimentary canal.

Viewing the disorder in the light we have mentioned, we proposed to treat it by blisters and issues, at the same time obviating the determination to the head, by keeping the belly open, and thereby determining the fluids to the uterus. The blisters seem to have had a very good effect here, and to have produced a proper resolution of the paroxysm in the swelling, as mentioned above. The common way of applying a perpetual blister, as it is called in England, or what we call a perpetual issue, is to apply the *emplastrum epispasticum*; and, when this has raised the skin, to add constantly the *ung. epispast.* and thereby keep up a perpetual discharge. Instead of this, we ordered a plaster, consisting of equal parts of *emplastrum vesicat.* & *cereum*, which we have often tried with great advantage. This doth not raise the cuticle, or erode the parts under it, but leaves them entire, and lets the hair grow up. As these, in ten or twelve days, push off the plaster, it is necessary to leave off the plaster, as soon as the skin can bear the razor, to take off the hair, and apply a fresh plaster. This gives less pain, is free from the inconvenience usually attending the blistering plaster, where the cantharides is absorbed, and gets into the blood, whereby a strangury is brought

brought on. To promote the discharge by the belly, we applied the aloetic pills; and when these were not effectual, added 1 gr. of calomel to 5 of aloes. This is one of the best laxatives, giving generally one stool in the day; it is what is generally known in these parts by the name of Chamberlain's Pill. We made another experiment here with aloes, which succeeded in giving a temporary relief, which is the only thing it does in general. We also made use of warm applications, which produced a sweat, and raised a heat, but were not applied properly in the paroxysms: this has hindered us from employing some remedies, that we otherwise should have attempted. We shall only subjoin another observation here, which is, that the menses occurring, gave considerable relief, for some days, as did a spontaneous diarrhœa, which accompanied them. The next case we shall mention, is that of **WILLIAM MACMILLAN**. His disorder, though not very distinct, appears to be the *cephalalgia melancholica*, from the symptoms accompanying it, as dimness of sight, double vision, vertigo, *tinnitus aurium*, &c. and these, too, occurring in a person of the melancholic temperament.

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This, then, is not to be referred to the general head of a topical fever, but to some particular cause, and perhaps of the vessels of the brain. There is always reason to suspect a venous plethora in such cases, and especially here, from the symptoms being increased by stooping. Thus the least return of his disorder came on from harvest-work, in which much stooping is requisite: add to this, that his complaints are always increased by cold of the feet; yet it is not certain whether this is to be looked upon as a cause or an effect. There are several cases of the melancholic torpor, independent of this venous plethora; and whatever produces this torpor, may also occasion the plethora.

There seems to be some peculiar affection of the origin of the nerves here; especially as this disorder comes on in consequence of a fever, which often leaves affections in the origin of the nerves. In our treatment of the patient, we first used moderate evacuations, as bleeding by leeches, few in number, but frequently repeated; but we did not push these largely, as they might have proved hurtful by weakening the system and increasing the torpor; besides, leeches have little effect in a venous plethora, and, in such a case, it is much better to open the jugular vein. We

next

next attempted a derivation from the head, by laxatives, or, perhaps, purgatives: but, as his complaints seemed to be aggravated by these, we desisted from the use of them, and perhaps too soon, as this might be owing to occasional causes only, which will often recur in such cases. We then tried a less ambiguous remedy, as blisters, which, at first seemed to have considerable effect, but less so afterwards. We also tried perpetual issues, in the manner mentioned in the preceding case.

As the *emplastrum calidum* had no effect, we substituted a stronger; but this, for want of due attention, has not been properly conducted. As the cuticle was but little affected, and the skin under it not eroded, we have ventured on the application of a fresh plaster, immediately: as we were still intent on procuring a derivation from the head, we employed valerian for that purpose. This has been always on the footing of a specific; but in this, as well as in all other specifics, we shall always find some operation, to which its effects may be attributed. Accordingly, valerian has shewn itself to be a laxative, in several other cases now in the house, and particularly in the present patient, on whom it operated considerably, when given to 3ii.

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We also tried more effectual purgatives, which seem to have given relief, or, at least, have not aggravated his symptoms. He is now free from head-ach entirely; and his dimness of sight, *tinnitus aurium*, and giddiness, are much better. A spontaneous diarrhœa has now come on, which, if not occasioned by our medicines, might, perhaps, be looked on as a resolution of the disorder. We at first suspected it to be hæmorrhoidal, as it came on without febrile symptoms; but he had some febrile symptoms yesterday, Jan. 27, and the night before; it is now keeping off. We only tried such remedies as were proper, supposing it to be a proper diarrhœa, or dysentery.

We shall next proceed to the case of Christie, labouring under a hydrophobia. We shall not attempt a general discussion of this mysterious subject, but give only a few remarks which arise from this particular case. The first thing we shall take notice of is, that it appears from the account, that some prophylactics were taken, and, among others, one medicine, of which liverwort was a principal ingredient. This, most probably, was Dr. Mead's Powder; and this is an instance, among many others, of the inefficacy of that powder. Another remedy attempted

attempted was the use of mercurial ointment: experience doth not permit us to expect any cure from this, unless it be so conducted as to raise a sweat, or excite a salivation.

Another method was attempted, which, if properly executed, would probably have been of service, for we were told that she was kept in a breathing sweat for some days; but it is very probable that this was not properly conducted, nor managed with sufficient care and attention.

To speak now of the symptoms, and first of hydrophobia:—this was upon her before she came into the house; but for some of the first hours there were scarce any symptoms of delirium.* This shews the errors of those writers who have considered it as connected with madness; among others, Boerhaave and Sauvages, who have both referred it to that head. But the hydrophobia seems rather to resemble the case of a man who shuns a draught which he has before found nauseous, or shrinks from a pain already experienced. At first, it shews itself only in swallowing liquids; afterwards, pre-

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* Here, then, is an instance of the hydrophobia existing for some time without delirium.

senting any such to the patient, has the same effect, by the force of imagination ; then the sight of water, and, at last, of any thing like water, produced it : thus the present patient could bear the sight of a looking-glass very well in the afternoon, but at eleven in the same evening it had the same effect upon her as water.

After the hydrophobia some delirium comes on, and this is variously influenced by the imagination. Another symptom is, in abstaining from touching any thing cold, and being greatly affected with the cold air ; but this only shews that the inflammatory state is now come on, under which the body acquires a great sensibility of cold, both in this and other disorders. This is generally one of the first symptoms of the inflammatory state having come on.

The chief symptoms, besides these already mentioned, were dejection, frequent sighings, and, in particular, a fear of being shot. As she knows she had been bitten by a mad dog, and probably great stir had been made in order to shoot this dog, this might probably work so far on her imagination, as to produce such an effect. She was frequently troubled with startings and

convulsive motions, and was more liable to these, when laid on the bed, than when standing. This was owing to the muscles being more in action, when standing, and thereby a greater degree of tension being given to the whole.

After these few remarks on the symptoms, we shall add some others on the remedies employed. The effects of any medicines, after the hydrophobia has come on, are so uncertain, that there is a great temptation to try others. The volatile alkali has of late been found in France very serviceable in the bite of a viper. There is indeed little resemblance in the effects of the two poisons; but as they are each animal poisons, there are some reasons to presume them to be of the same nature.

But besides that, it is said to have cured the hydrophobia in one or two cases. This induced us to try it, and in such a quantity, that she had about thirty grains in two hours: as it produced no sensible effect in that time, it was then deserted.

We next tried the musk; but, as the swallowing of a solid bolus was then very painful, we tried it by way of glister, but without success: we then tried it by the mouth again, with a

quantity of laud. liq. What were the effects of these, is not evident. They seemed to produce some remission, so that she swallowed another bolus, with less aversion and difficulty than before: this perhaps might be owing to the laudanum diminishing the sensibility of the system; however, they were unable to stop the progress of the disease. This is, in general, very quick, though of different duration, after the first symptoms come on; and there is hardly any instance of their continuing more than four days. Here it was remarkably quick; for with the few moderate symptoms she had on her, when she came into the house, she died in twenty-one hours.

On dissection, nothing præternatural was found in the head, and there were rather marks of emptiness than fullness. As we consider this disorder as an affection of the origin of the nerves, it must depend on affections escaping our observation, and not upon any organical affection of the sanguiferous system of those parts, as we have frequently explained before. In the fauces, larynx, æsophagus, and stomach, there were no distinct marks of any inflammatory affection.

Boerhaave,

Boerhaave, and many other writers, seem to lay it down for certain, that inflammation in those parts always occur in the hydrophobia. This, indeed, seems the easiest solution of it ; and we have known an instance of the hydrophobia, in consequence of an inflammation of the stomach, independent of any bite of a mad dog ; yet this case is an absolute contradiction to that. To what, then, is the hydrophobia to be referred ? It is too difficult of solution ; nor have we now time for conjectures. Perhaps the difficulty of swallowing liquids may arise from hence, that the parts are obliged to contract much, in order to embrace these, as being matters which do not make a resistance, and this occasions considerable pain. This may afterwards be extended by the force of the imagination, as mentioned above.

But to proceed :—in the lungs were found considerable marks of inflammation ; and agreeably to other dissections of like cases, where some or other of the viscera usually appear inflamed, there was some suspicion of the pancreas being affected, it appearing redder than usual. The appearances in the other abdominal viscera had no connexion with this particular disease. We shall now add a few other remarks

marks on this disease. 1st, It attacks purely and entirely the nervous system, as appears from its symptoms, which are affections of the mind, dejection, love of solitude, watchfulness, disturbed sleep, frightful dreams, startings, and convulsive motions. It is only in its progress afterwards, that it passes from this to the sanguiferous system, producing inflammation, fever, and other such symptoms. The delirium may be referred to either of these states. The disorder, then, should always be viewed as having each of these states on its progress. With regard to the method of cure, it is entirely on a doubtful footing. Immersions in the sea, musk, opium, mercurials, have all been said to have cured, in some cases; and yet, in others, they have as certainly failed.

There is another doubt, with regard to the prophylactics, in this case. We are not certain that the disorder will happen; for, sometimes, where two persons have been bit by the same dog, one has had the hydrophobia, and the other not. Prophylactics have, indeed, often been ineffectual; yet, in these cases, we should not draw any conclusion against them, as they may have been carelessly and inaccurately employed; but should rather trust to those accounts in

in which they were effectual remedies. They may be referred to these three, immersions in the sea, musk, and mercury. None is of more doubtful efficacy than the first, which has often failed, when properly applied, even among the Dutch, who are not apt to be too much influenced by a sense of pity; for the patient should be brought as near to drowning as possible. It cannot have any effect, by acting on the nature of the poison, but must counteract its effects by greatly affecting the nervous system. This leads to a question often recurring in physic, Whether it is absolutely necessary for a disorder either to be evacuated or corrected? Neither of these takes place in this case. Somewhat analogous to this is the chin-cough, which is as contagious a disorder as any we know.

With regard to musk, from the testimony given of it in China, and from experience of its effects in Europe, it seems likely to be the most effectual: as it is almost impossible to get it unadulterated, whenever it doth not succeed, we may suppose it to be owing to that circumstance. Supposing it to be procured genuine, what is the proper method of administering it? In the East-Indies it is given in such a dose, as to produce sleep, and in that to bring

bring on a profuse sweat ; and if it has not this effect within three hours, the dose is repeated. Whatever has been said concerning the anti-spasmodic virtues of musk, its operation seems here to depend on its power as a sudorific. If this is really the case, we shall not allow musk to be properly employed in these cases, unless it is thus conducted. In order to support this notion, we find several instances mentioned in Hillary, on the disorders of the West-Indies, of this disorder being cured by giving musk for several days and nights, and keeping up a profuse sweat. In most of these cases, it was used as a prophylactic ; but, in some others, the hydrophobia had come on.

What is of still more weight is, that he tells us, that before he was acquainted with the virtues of musk, he performed cures, after the hydrophobia had come on, by procuring sweat by other medicines, as opium and camphor. Here, then, the cure is performed by different remedies, but both having this effect. Mercury will not effect a cure, unless it is made to produce sweat, or some salivation. Turbith mineral, given in large doses, with opium, so as to excite sweating, is an useful prophylactic : so are mercurial ointments, when they cause more or

or less spitting. Perhaps the cure of the venereal disease is not to be imputed to the spitting alone, but to the sweat, or at least copious perspiration kept up during the time. If calomel, then, is given, or other preparations of mercury, and these are purged off, without being allowed to act upon the whole system, and to have a general determination to every part, it is not to be wondered, if they are inefficacious. Mercurials, therefore, unless made to act in one or other of these ways, seem likely to be of little service; but sweating, by keeping up a distribution of blood equally to every part, if any thing is to be evacuated, stands the best chance of doing it, independent of evacuations, and will often cure affections of the nerves. But though these remedies will often obviate the approach of the disorder, there are very few instances in which any of them will avail, after the hydrophobia is come on.

To give an explanation of this:—This disorder is of two states; one, in which the nervous system is affected; and a second, in which, in consequence of that affection of the nervous system, the sanguiferous is also affected, and inflammation appears in different

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parts. Now, though the remedies applied may be of great service in the first of these states, yet, as soon as the inflammatory state comes on, they must rather hasten death. It has been proposed, therefore, to let blood, in order to prevent this inflammatory state: but this, and the rest of the antiphlogistic method, will only abate the fever, without touching the cause of the disorder, and will even hurt the nervous system.

IN considering the diseases of the several patients which shall come under our cognisance in the following Lectures, I shall frequently enter particularly into the symptoms. In many instances, indeed, this will be unnecessary, as it is to be hoped that, by your former studies and attendance on the other classes, you are provided with principles sufficient to understand them of yourselves; but there are some of very great consequence, which are not, I believe, sufficiently explained in any thing on this subject to which you can have access. The principal of these is the pulse; and as we shall have occasion to mention the state of it so often in the succeeding part of our course, it will be of considerable use to throw together here some thoughts relating to its acceleration.

OF THE ACCELERATION OF THE PULSE.*

THE pulse arises from the repeated contractions of the heart, and its acceleration and frequency arise from the more frequent repetition of

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* Acceleration here is used rather improperly, if we enter into the distinction between the *pulsus celer* and *frequens*, for it is the last that is here treated of.

these contractions than ordinary: but the heart, being a muscular organ, owes its contraction to its irritability; and according as this irritability is increased, the heart will be more easily stimulated to contraction; or if the stimulus be increased, and more frequently applied, the heart will be solicited to quicker contractions, even though the irritability remain in its ordinary state.

Hence then we may reduce the causes of the frequency of the pulse to two general classes, viz.

- I. The quicker influx of venous blood*
- II. The greater application of the nervous power

Of each of these we shall treat separately: and,

I. Of the Influx of Venous Blood.

This acts in increasing the frequency of the pulse, either as it is made to flow by any cause more frequently to the ventricles, or when any cause prevents its proper evacuation from them. The flux of blood to the right ventricle is determined to be more frequent by the action of the muscles of the body, which is greater from lying, gradually to sitting, standing, walking, running,

* Which is the stimulus that acts on the heart.

running, &c. For these, by their contraction, press on the contiguous veins, and thereby propel the blood more quickly through them to the heart. Into the left ventricle the blood is determined more quickly, from the pulmonary vessels, by the various modifications of respiration, as breathing, coughing, laughing, sighing, &c.

The proportion of the body influences the influx of blood into both ventricles: thus it is less frequent in the adult than in the foetus, or children, and less in those of a large stature* than in small-sized children.

When any cause prevents the complete evacuation of the heart, its contraction is more frequent; for the contraction is a consequence of dilatation, from the venous blood flowing in. Now if we suppose all the blood in the ventricles is not thrown out by the former contraction, the heart will be sooner filled and dilated again, and therefore another contraction sooner ensue. This is found in weakness, polypus, &c.

II. *Of the Application of the Nervous Power.*

Under this head we may first reckon too great sensibility and irritability of the nervous system
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* The pulse also diminishes in frequency from the adult state to that of old-age; but this depends on a defect of the nervous power, and belongs therefore to the next head.

in general, which is either constitutional, or may arise from other causes, as inflammation. The exercise of the mind in general proves a stimulus to the system, and particularly the heart: even the most abstract enquiry, I imagine, stimulates in some measure; but diversified study or attention to different objects has this effect more strongly. Hence, in a delirium, when the mind is employed about a great variety of different objects, by fixing the attention of the patient to one in particular, we can preserve the patient sensible for a considerable time. Soft uniform music, the exclusion of light, which diminishes the objects of sense, &c. are, therefore, found to be of use in this disease.

If the mind is under any emotion, especially if it be such as determines to action, it stimulates in a more strong and evident manner: thus we place in common language the seat of the passions in the heart. We see, therefore, that though the heart is an involuntary muscle, the will has some influence on it. It is true we are not conscious of this influence of the will; but are we so in the case of the voluntary muscles? Surely when by an act of volition I contract my fingers, I am not in the least conscious of what muscle I exert to produce that effect.

All the passions, however, do not increase the

frequency of the heart's contraction; only the more violent, and particularly the pleasant, as pride, vanity, love, joy: those of an opposite nature seem rather to diminish the pulse; as humility, sorrow, fear, &c. And here it may not be improper to observe, that the opposites of all the causes that increase the pulse, tend to render it less frequent; so that there will be no occasion to say any thing of the *præternatural* slowness of it.

There is a mixed kind of stimulus which acts both directly on the body, and also, in consequence of its action, on the mind; I mean the impression received by the external senses from external objects. This is so powerful, that it seems to be the chief cause next to heat (an impression not properly conveyed by any of the senses), that begins and continues the motion of the heart. There have been instances of some who have fallen into absolute inertness, by all the objects of the senses being excluded: to this I would refer the influence of waking and sleeping. When we are asleep, the senses being unoccupied, they afford no stimulus; and whatever may have been said to the contrary, I am well convinced that the pulse is slower at that time; it is certainly slowest in the morning, and becomes gradually quicker through the day.

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We may consider the effect of impressions and sensations, either as they are general or particular.

Of the first there are many whose effects we cannot properly examine; as those made by the revolutions of the planets of our system, the different states of the atmosphere, &c.

There is one general stimulating impression, whose effects are very remarkable; I mean heat: this I take to be the chief origin and great support of life and motion (as we hinted above). Whether we admit the animalcules of Lieuenhoeck, or the organic molicules of Buffon, it is certainly this that first sets the springs of animal life a going.

Bats, swallows, and other dormant animals, when in a state of torpor, and void of all sensation, on being brought to the fire, have first a tremulous motion excited in their cutaneous* small vessels, afterwards their heart begins to contract, and at length the animal is awakened into life.

From this cause the pulse is quicker in warm weather, or warm climates, warm rooms, hot baths, &c. From a remark made above, you will conclude that cold has the contrary effect; but though this is generally so, yet there are cases in which cold stimulates.

Though

This is best observed in the pellucid wings of bats.

Though the certain degree of heat necessary to stimulate the heart to quicker contractions is not determined by proper experiments, yet, from such observations as I have made, it would seem that all above 60° of Fahrenheit stimulates, and *vice versa*.

Electricity also, by its impression applied in a general manner, I believe acts as a stimulus to the heart; I mean when diffused in the room in which one stands in great quantity. Certain it is that it has this effect, when received into the body from a conductor, as is clear from its removing palsy, menstrual obstructions, &c.

With regard to impressions on particular parts, they are either such as we are sensible of, or such as we do not perceive. Of the first, all that are grateful prove stimuli to the heart, and all that are strong. These last are also painful; and pain stimulates, though not always; for in some headaches and cholicks the pulse is slower, and in chronic rheumatism sometimes natural. How are we to distinguish here? Perhaps it is pain arising from inflammation that stimulates, though it is not to this alone that inflammation owes its stimulating quality. I am convinced there is a spastic constriction takes place under it, and that stimulates the heart; and we before observed

B b *that*

that inflammation increases the irritability of the system.

A particular state of the tension of the body may prove a cause of stimulus; a kind of equilibrium being necessary in the tension of all the muscles: when this is destroyed in any of them, a stimulus will be communicated to the heart. This takes place when there is a tension of the intestinal canal, from the retention of the indurated faeces.

Impressions made on the stomach, affect the heart remarkably, as there can be no other way of accounting for the effect that is produced on it by swallowing cold water, neutral salts, and many other medicines, but from the impression made by them on the stomach.

OBSERVATIONS ON THE PALSY.

A PALSY is a loss of motion of any part, and frequently of sense; the loss of both is often meant by Palsy, but, I believe,* improperly; and it is in the case of the loss of motion that I mean it here. Motion in muscles depends upon

* He thinks it improper to confine the term to those cases where there is a loss of both.

their own organs, or the operation of the nervous influence on them :—the first may be diseased, so as to occasion loss of motion, viz. from rigidity or any other cause; but this is not properly a * palsy. If we suppose † that such disease in the muscle itself comes to affect the nerve of the muscle, so as to prevent the operation of the nervous influence, *quare*, if it is not then to be reckoned a palsy ?

The Causes of Palsy.

The various causes of Palsy are very differently explained, as the nervous power is so mysterious on which it depends. Though the nervous power is a distinguishing part of the animal œconomy, yet it seems to be present in vegetables also, for they appear to me to be endued with evident sensibility and irritability.

In those animals which are subject at certain periods to a certain degree of torpidity, or even death, as bats, &c. this power is still present; for when they are recovered by heat, on

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not* As in the gout, odematous swellings, &c.

† The following remarks are made with a view to shew how far the prevailing theories relating to this power are liable to strong and just objections.

what does this act but on the nervous power? Now these facts certainly tend to weaken the received doctrine of this power being a fluid secreted by a particular organ: and, further, if it is present in vegetables, there does not seem to be a general connexion, as in animals; for it may be made to act in one part, and not in the rest. If we introduce a part of a deciduous plant at the window of a green-house, and let out the top again, during the winter season, the part within will vegetate and grow white; but the part next the root, and the top of the plant, being without, will die. Here the heat in the room, acting as a stimulus to the irritable part of that portion which is in the green-house, keeps it alive, while the rest dies for want of such a stimulus.

To return, however:—in man there is certainly, and in other animals, a particular seat of this power, from which it is derived to the rest of the body, and without which it cannot subsist in the rest for any time; indeed in worms, and in some other insects, after the body is divided, each part continues alive, or even puts on the form of a complete system; but such a division of the sensorium, or seat of the nervous power in man, from the rest of the body, entirely destroys

destroys sense and motion. Now, the motion of a muscle may be interrupted, either by a cause affecting this seat of the nervous power, or one which affects the particular nerves in their course. The first is the much more common, and is that which is the cause of the palsy under consideration ; for the patient had at first a manifest appearance of an affection of the brain, and has still a great part of one whole side affected. I am here, therefore, only to consider the palsy affecting the *sensorium commune*. The causes of palsy from an affection of the *sensorium commune*,* are commonly reckoned, first, the *compression* arising on the nerves from distended blood-vessels, &c. I had once a very favourable opportunity of observing this in an ascitic patient, where the compression of the *aorta descendens* manifestly occasioned a greater flow of blood to the brain, so as to produce giddiness, dimness of sight, and other symptoms of compression in the *sensorium* ; and when she bowed her head,

she

* Indeed it is much seldomer to be met with, confined to a particular nerve or twig, than is commonly thought ; for we cannot, by pressure, or any other means, stop the course of the nervous influence, without finding that it immediately communicates its effects to the *sensorium*.

she fell down, like one apoplectic, but was relieved by raising herself up again.

Many people in health are liable to have this compression, as in the incubus, which I have known to go the length of apoplexy, and continue for some hours, or even days.

This is particularly felt by people of large heads and short necks, because there is room for more blood in the cranium, and it finds a more difficult exit; and in old persons, who have the system of veins larger, and more rigid and inert.

This kind of compression being particularly connected with the cause of apoplexy, palsies arising from it are generally begun by apoplectic fits, and are attended with symptoms of the strongest kind, indicating an affection of the *sensorium commune*. But though we can easily account for the formation of the disease, it is difficult to understand how it continues after the apoplectic fit is over. Physicians, indeed, have endeavoured to solve this, by a supposed continuance of the compressing cause, as perhaps to the stopping of the menses, haemorrhoids, &c. but I do not think there can by this be an accumulation to have any effect of this kind. In many cases where such palsies are present, bleeding, or even the return of the haemorrhoids, have come

come on without any good effects; and, besides, we must consider that there are other causes of compression, as from serous or watery accumulations in the brain, or a congeries of pus, and hence a distinction into sanguineous and serous: and, where no marks of the first appear, the palsy is often attributed to the serous; but these are also liable to objections; for, when such has been imagined the cause, and the cranium was laid open after death, no serum was found within it.

In many cases, the stoppage of nervous power is often attributed to ~~lentor~~, or some obstructing cause within the nerves; and this is very consentaneous to the supposition of the secretion of a nervous fluid: however it is merely hypothetical, as that secretion itself; and, on that account, may be rejected, though we had no other argument against it; but in the greatest part of these palsies, we find the nerves still permeable.

I have now mentioned the most common assigned causes of palsy, and which alone are taken into consideration by Boerhaave, and other writers: but there are certainly other, and very common, however inexplicable causes. Take the case of sleep, when there is a total, and sometimes

times irresistible cessation of the flow of the nervous power. This has been referred to obstruction; but that has never been satisfactorily proved. Another cause of sleep has been supposed to be a defect of the nervous power, it being expended more quickly than it is renewed: but this is not the true one, for we find a stimulus will awaken the most drowsy person, and we can easily divert the hour of sleep, or induce sleep much sooner than ordinary, even at any time we choose. Indeed there have been some extraordinary cases, where no stimulus has been able to prevent it, as was found in Scotland, when, the notion of witchcraft prevailing, persons tried for this crime were pricked for a length of time; for at last, in spite of this, they fell asleep. Periodical sleeping and waking also confutes this, for I have known people who, when accustomed to awake at a certain hour, would still continue to do so, though oppressed with fatigue, and not allowed to go to bed till half an hour before that time. Where is there time here for the supposed extraordinary exertion to be supplied? Neither is the notion of a defect of quantity reconcileable with the effects of opium, and other medicines, in producing sleep and loss of sense

and motion ; for they will produce that effect on one particular part before they have any influence on the sensorium.

The dysentery, *tabes dorsalis*, and *colica pictonum*, which induce palsies, shew that it must arise from something else than compression or obstruction in such cases ; and, indeed, what we have observed above concerning the marks of remaining permeability in the nerves in paralytic cases, added to this, seems to point out that the disease arises from a defect or weakness of the impelling power.*

Prognosis.

This depends on the part affected, viz. the brain, *medulla spinalis*, or particular nerves ; for these are of different use in the system, that is more or less universal or necessary.

The intellectual powers are particularly connected with the brain, so that it is of the greatest importance ; and hence, all palsies that arise from the brain are of greater danger and more difficult cure than those which arise from the *medulla spinalis* : but palsies arising from the brain are

* This is a doctrine of the Stahlian school ; but they go a step farther, in calling this impelling power the mind.

less common than those from the *medulla spinalis*. When palsy is attended with disorder of the intellectual powers, or those senses which depend on the brain, viz. sight, smell, taste, and hearing (for touch, I imagine, may be produced by nerves arising from any part of the body, certainly it may from nerves arising from the *medulla spinalis*), then I say the *prognosis* is unfavourable.

Haller has observed that sense requires less force in the impelling power than motion does: hence we may consider these palsies as less dangerous when motion is lost, than when sense.*

The lost heat of a part I consider as a more dangerous symptom than that of sense; for as the heat depends on the motion of the heart, &c. it is a proof that the heart and arteries do not receive the nervous powers more than the muscles affected; and consequently the disease is more universal. But as every body does not admit that the nervous influence is the cause of the contraction of the heart and arteries; and some suppose, with Haller, a *vis insita contractilis*;

* It is surprising that, when the nerves that go off together in a bundle from the sensorium are both the cause of sense and motion in a muscle, yet the one should be destroyed, and the other remain entire: this affords a proof that these nerves are distinct, even in the sensorium.

to such this prognostic sign will appear unjust; but, however, experience confirms it; and even on their doctrine it may be owing to the loss of motion in the affected muscle, which therefore does not assist to propel the blood with sufficient force to the heart, so that thereby the circulation is rendered languid, and the disease more dangerous.

It is for the same reason that the loss of nourishment and decay of the part, affords an unfavourable *prognosis*.

When the muscles continue contracted, I consider it as favourable, because it is a proof that they still retain some degree of irritability.

In general I would form a more favourable prognosis, where the nerves are permeable: and here we may observe, that medicines that have no effect when applied to the hand, yet stimulate often farther up, as does also electricity.

OF THE CURE OF THE PALSY.

WE can distinguish palsies as arising from particular or more general causes, as falls, distortions, other diseases, &c. according to each of which particular care must be taken; but, as there is no foundation for any such particular

cause being supposed in the present case, we must have recourse to the general cause, which we have already supposed to be generally an affection of the moving power, or that general stimulus which excites the nervous influence by its energy to the different parts of the body. Our business, therefore, in the cure, is to apply artificial stimuli, to supply the defects of these. Whatever be the theory of this disease, admitted by authors, their practice generally tends to answer this view. If compression from distended blood-vessels be the cause, blood-letting should remove the disease; but, on the contrary, I have seldom seen this attended with good effects, often with bad, even in what has been reckoned of the sanguineous kind. Indeed physicians in all ages have been divided on this head; the Greek physicians absolutely forbidding it, while the Arabians often admitted it.

The chief cure, therefore, of palsies depends on stimuli, which may be divided into internal and external. It is doubtful to which of these the passions are to be referred, which have manifest effects in removing this disease. I knew a gentleman affected with palsy, who, when thrown into a passion, could speak, pretty distinctly, and even move his paralytic limbs, neither

neither of which he could do at any other time. But this stimulus we have not in our power to apply in practice, both because it is difficult to follow the proper manner of exciting them, and because, if I may use the expression, we cannot ascertain the dose; and contrary to the above-mentioned case, I have known paralytic patients that commonly spoke pretty clearly, by being excited to certain passions, deprived entirely of the use of speech.

The next internal stimulus which I would mention, is fever. This is recommended by Dr. Boerhaave, and his commentator, Van Swieten: and they are not only supported by the experience of fevers,* coming accidentally on, but also by theory; for fever, by increasing the heart's contractions, proves a means of conveying heat to the affected parts; and any danger that might arise from the quicker circulation, is obviated by the succeeding sweats. But it is not in our power to *excite* a proper fever; for I imagine that authors, when speaking of this, mean nothing more than raising by stimuli a velocity of pulse and circulation; and here I must observe,

* Intermittent fevers have been frequently known to remove palsy.

that there are some stimuli which act on the nervous system, without affecting the heart and vessels in any degree, and others that act powerfully on the sanguiferous system, without having great influence on the nervous system. Hence, I would divide stimuli into nervous and inflammatory: these are not, however, quite disjoined; nervous stimuli cannot be long applied without bringing the heart and vessels into consent, and *vice versa*. But, as the effects of inflammatory are more permanent, and are particularly improper in the case of compression, we should avoid them, as much as possible, in this disease, and confine ourselves to the nervous: I shall, therefore, have this distinction throughout this Lecture; and I may mention among the nervous stimuli, the volatile alkali, which, applied to the nostrils, is of excellent service, and does not affect the blood-vessels; and even taken into the stomach, it is hardly ever dangerous, as an inflammatory stimulant, unless in a great dose but it is never so efficacious, given in this way.

In the vegetable kingdom, the hot *antiscorbutics*, as mustard, horse-radish, which are the *tetradynamia* of Linnæus, are of great service thrown into the stomach, and diffuse themselves

themselves quickly over the whole nervous system. I have a patient who is just now taking the infusion of horse-radish in wine, who, every time he uses it, feels a *formicatio*, or prickling, to his very toes. They all possess a very acrid taste, and frequently prove diuretic, diaphoretic, and sometimes cathartic: they may be, indeed, inflammatory, applied externally, exciting inflammation and blisters; but they have not this effect, taken internally, as is evident from their use in scurvy, a disease in which the smallest degree of inflammation would prove of most dangerous consequence. Among the various stimuli, in this disease, I think those are the most eligible, and from experience also I am led to think them the most efficacious stimuli of any for internal use; I think they are best infused in water, with the addition of a little sugar, to render them more palatable. Mustard, as well as horse-radish, may be given in great quantities, in the form of syrup, without producing the smallest inflammatory symptom.

The aromatics are stimulating; but they possess more of the inflammatory stimulus, than the volatile alkali, or the antiscorbutics.

The *balsamic* or *resinous* substances are stimulants; but, as they act chiefly on the *prime*

via,

viz., it is difficult to prevent their proving purgative. This is particularly the case with *guaicum*, or otherwise it is a very efficacious stimulant. It is much recommended on account of this quality by old writers, but has of late been little used for its purging effects.

The *fætids* are sometimes employed, and are given in general in nervous cases, as stimulants, such as *castor* and *assafœtida*. It is true, they have some degree of stimulus; but, when given in large doses, they are rather sedative, as, indeed, all the antispasmodic class is.

There are some mineral stimuli, such as *mercury*, which I have seen useful in partial palsies, but never in general ones; and, indeed, then it would require to be given in such quantity, as would prove highly inflammatory. Others employ another argument against it, *viz.* that mercurial fumigations often induce palsy; but this is not conclusive against the other methods of exhibition.

Antimony stimulates; and I would approve of it more than any other remedy, if fevers were to be excited, as it diffuses a gentle diaphoresis; and this leads me to consider another kind of internal stimuli in palsy, *viz.* such as are attended with evacuation.

Sudorifics. These I would not approve of, as they convey the stimulus of the fluids through the whole body ; but I have found in practical writers, that the repeated use of them, if they do not relieve at first, proves detrimental in our disease ; and I think my own experience confirms it.

Emetics are very powerful stimulants ; and if the cause of the disease be in the stomach (which it is sometimes, from the connexion of this viscus with the brain), they are the only proper ones ; but if the disease be owing to compression, they increase it. Vomits of the quickest and shortest operation are most proper ; hence mustard* should be preferred.

Purgatives.—Their effects to me are ambiguous and mysterious. We have, indeed, the authority of many practitioners for them. Perhaps in serous palsy they may, as hydragogues, be useful ; but considered as stimuli, little, I think, is to be expected from them.

These are the chief of the internal stimuli ; there is another kind, which may be referred to this head, viz.

Sternutatories.—These may be hurtful in general

* Mustard is also to be chosen on account of its other advantages mentioned above.

neral affections of the senscium, when fulness or compression is the cause, by giving too great a shock; but are sometimes useful in the case of partial palsies, as turbith mineral is found to be in the *Amaurosis*, where there is no reason to apprehend any evil consequence from the severe shock. We may also reckon, perhaps, among internal stimuli,

Masticatories, or such as are chewed in the mouth; but their stimulus does not extend farther than the organs employed in the office of mastication: indeed, the secretion of the saliva may sometimes be of service. Of external stimuli, it may be observed, first, that they are safest, because they are more commonly of the nervous kind; and, when inflammatory, we can manage them better; and when they shew a tendency to produce hurtful consequences, we have it more in our power to remove them. They are also more powerful generally, and efficacious.

Heat is the chief external stimulus, being, as we observed in Lecture first, that which sets the whole springs of the body going; it is certainly, therefore, of material consequence, to keep paralytic patients in a proper degree of heat; and cold has often produced palsy.

But this may be hurtful, improperly applied, because

because it is peculiarly a stimulus * to the heart, and, at the same time, rarefies the blood ; and this not only increases the compression, if such be the cause of the disease, but also, by over-distending the vessels, destroys their tone, and thereby increases the distemper.

Of the various ways of applying this stimulus, the chief are,

1. The dry heat of the bagnio.
2. The warmth from warm steams of spirits of wine, &c.
3. The warm bath.
4. The application of sand round the body warm.

5. The application of warm salt. There are some late experiments which would lead to expect particular good effects from this.

6. The application of animals cut up alive, which has been found of equal service ; nay, superior to any other way of applying this stimulus ; though the same degree of heat may easily be had by any other of the above-means : whether it owes its peculiar effects to its affinity to animal heat, we cannot say.

Cold may be mentioned, as belonging to the external stimuli. Thus, handling snow

D d 2 excites

* Vide *Leet.* on the Frequency of the Pulse.

excites a redness of the hands ; and I have known it of singular use in palsies ; but it must be suddenly applied, and the patient immediately rubbed well after it ; otherwise, it has a contrary effect, as we observed above.

Blisters are among the most common stimuli applied by physicians. I have known physicians advise, with some propriety, to remove them, before they blister. The advantage of this I have found myself.

Issues and Setons.—These, and blisters also, are imagined to be useful in the case of serous palsies, by the derivation they make ; but I am apt to think that they may also be serviceable in other palsies, from the continued stimulus, which the inflammation they excite affords.

Rubefacientia, or such applications as excite redness of the skin, may in general be reckoned stimulants.

Friction, I am convinced, would be often very serviceable, if applied sufficiently long, which is generally neglected. It excites the action of all the system.

Nettles, and *whipping* with rods, have been recommended by some ; but, however efficacious, few will choose to use them.

Acids,

Acids, though they stimulate, yet their stimulus is more of the inflammatory kind, because in their naked state they are too corrosive ; they are combined with oil, as in the *unguent. ad paral.* of the *Pharm. Pauperum*, which might be improved by leaving out the acid.

The Volatile Alkali is more a nervous stimulus, and therefore more proper.

The more acid, however, the alkali is, the better ; but it is necessary to unite it with oil, which takes off the inflammatory stimulus (which it also has in some degree), and leaves the nervous.

The Antiscorbutics above-mentioned are extremely powerful stimuli, externally applied ; for instance, mustard : and I imagine it is more useful than blisters ; for it gives a more sudden and stronger stimulus, if mixed with water, and can be removed more quickly and conveniently. Several other external stimuli are to be found among practical authors of essential and *empy-reumatic* oils ; but I do not find that they are so strong stimulants ; and, if continued, are more inflammatory than those above mentioned. There is even choice made among these ; as, for instance, the *aromatic oils*, which are most

most expensive, have been chiefly recommended; but, if any are to be used, I would prefer the

Resinous, or those extracted from resins, as they are not so inflammatory as the aromatic. The *Empyreumatic* are still more inflammatory.

There is a particular kind of refined empyreumatic oil of animals, called *oleum de lateribus*,* much recommended by authors who lived at the introduction of chemistry. I cannot, from experience, give any character of it. The *ol. succin.* one of the fossil oils, has been recommended, but not with any propriety; and it may be observed of all these oils in general, that they must not be applied to flaccid or swelled places, as they there dispose to gangrene. I have still in reserve to mention a more powerful external stimulus than any, viz. *electricity*, of which in some following Lecture.

RHEUMATISM.

THIS is a common subject; but, however common, like most other subjects in physic, it

* Vide Dr. Cullen's Lecture on the Empyreumatic Animal Oils. *Materia Medica*.

it admits of a great deal of discussion. We shall begin, by endeavouring to establish a definition of this disease.

A *rheumatism* is a pain in the joints, commonly inflammatory, and, so far as it is so, affecting the other parts at the same time, free of any peculiar acrimony, or with any tendency to haemorrhagy. By being inflammatory, I mean it is attended with fever; but, I have added commonly, because authors have divided it into acute and chronic; and frequently, in the latter, there is no fever present.*

I have in this definition added; that it is only in consequence of the inflammation attending it, that it affects the system in any other part but the joints, to distinguish it from the gout, which has a particular connexion with the viscera.

I

* It is, perhaps, one of the most difficult parts, in writing on any disease, to give a just definition of it, such as may include all the characters of the disease, and at the same time serve to distinguish it from others, by leaving out every thing it has in common with them. This, I hope, is done by the definition here given of rheumatism; in which definition I only include the characters peculiar to it, and which distinguish it from gout, scurvy, pox, tooth-ach, and lumbago haemorrhoidalis.

I have mentioned, that it has no particular acrimony to distinguish it from those pains, similar to rheumatic, which are excited by the scurvy, and pox, and tooth-ach: and, in order to establish a difference between it and those pains of the joints which precede hæmorrhagy (as in the *lumbago bæmorrhoidalis*), I have said that it is without any tendency to produce hæmorrhage. Let us now consider more particularly the distinction between it and other diseases; and first the *Gout*. Are the gout and rheumatism the same disease? The ancients did not distinguish them, but named them both under the term of *arthritis*. Boerhaave has perplexed this matter very much, by the following account, which he gives of the rheumatism:--- *Arthritide podagræ scorbuto agnatus frequentissimus morbus deprehenditur.*"

Dr. Storck, one of our best late practical writers, in his first *Annus Medicus*, under the title of *Arthritis*, evidently treats of rheumatism.

I could give innumerable other instances of the same confusion of these two diseases, from other practical authors; but, after all, I imagine, by a due attention to the following ob-

jections, it will appear that they are two very distinct distempers.

I. Gout and rheumatism, I think, may be distinguished by the subjects of them, as they differ in respect of age, sex, and temperament. Thus,

1. Rheumatism is a disease of all ages, whereas the gout commonly attacks people on the decay of life: however, this distinction is only to be taken in a general sense; for I have seen a regular fit of the gout, in a boy of fourteen years of age.

2. Some kind of difference may be taken from the sex of those who are subject to it. The rheumatism belongs to both sexes. The gout is more common in men; but this is still to be admitted as the former distinction, in a general view. Hippocrates says, that women are not subject, till after their menstruation is over. I know, however, that this does not apply to our climate; for I have known women have the gout before that evacuation disappeared, and even such as menstruated frequently, and in great quantity; and a creditable author informs us of a goutish paroxysm in a girl of sixteen, which also confirms what we said of difference.

3. *Temperaments* may afford a distinction. Boerhaave tells us, that the sanguine habit disposes chiefly to the rheumatism, and *corpus magnum plenum crassum* to the gout: but, however, the gout frequently seizes on the sanguineous, and rheumatism on all habits; though I own, the feet, and those of a large size, are more subject to the gout than others.

II. They may generally be distinguished by their occasional causes: that of the rheumatism is commonly external and evident; whereas, the gout arises generally without any obvious or outward cause.

The rheumatism is induced by cold and moisture: the gout scarce ever is. One cause they have in common, viz. sprains; for, if desired to recollect, most patients attribute the first fit of the gout to this, as well as the rheumatism. Often hereditary communication may be considered as the cause of the gout; never of rheumatism; for though the latter may appear in those whose parents have been subject to it, yet we always find that it has, even in them, arisen from external causes. Often the gout is propagated from a nephritic parent.

III. Physicians have sometimes distinguished them by their seat. The gout is found to confine

confine itself chiefly to the joints, while the rheumatism often spreads along the muscles. This has been so much depended on, that Sauvages, in his *Pathologia Methodica*, a book treating principally on the distinctions of diseases, calls the first *dolor articulorum*, and the rheumatism *carnearum partium*.

But Boerhaave, on the contrary, takes no notice of the rheumatism extending to the muscles, and therefore did not suppose any distinction from this; and it is certain that the gout often extends to the muscles, and appears even sometimes seated entirely in a muscle.

Some suppose the rheumatism seated in the membranes and *aponeurosis* of the muscles, while the gout is deep-seated in the ligament. This cannot afford any proper distinguishing mark; and it cannot be possible to know, from the examination of a patient, which is affected; for, though the gout may be sometimes handled without giving pain, and the rheumatism commonly does, yet this is sometimes inverted; and Boerhaave places the rheumatism entirely in the ligaments, “*Juncturas quorumque artuum obsidit.*” But I believe, however, there is some foundation for this, and it might be of use in the theory of the disease. It might

be determined (at first one would think) by the matter deposited being found in the ligaments by dissection in gouty cases ; and this I own I believed (with others), till Dr. Storck, in his *Annus Medicus*, gave us histories of a gelatinous matter being found deposited in the joints and ligaments, in cases evidently rheumatic.

Limbert, a writer on the wandering gout, has supposed that there are two sorts of vessels of the joints, one of a finer, and one of a coarser nature ; and that the gout affects the first, and the rheumatism the latter ; and by supposing the gouty matter to pass into the larger order, he constitutes a *goutte rheumatique*, and, when the contrary happens, *rheumatisme goutteux* ; but this is to be neglected, as being downright hypothesis. With respect to the distinctions from their seats, I think in general the gout is more fixed to one particular part, and the rheumatism more apt to shift, though this will be far from holding always.

It is not a very easy matter to distinguish them, according to their symptoms.

With regard to the pain, or any difference in it, I confess I am at a loss to understand the language of writers concerning it ; or when I do understand it, I do not find that the difference

rence meant is established by experience, viz. the *dolor lancinans* in the gout, and *pungens* in the rheumatism. The swelling and redness are often similar. I think no distinction under this head is to be taken, but from their effects on the other part of the system. I have observed that the rheumatism is a disease of the joints, and that it only affects the other parts by the inflammation it excites, and the increase of the action of the vascular system, or fever. Indeed, this is also true of the gout, that it excites a greater action of the heart, and fever; but the gout, as above observed, is particularly connected with the viscera, viz. the brain in the cranium, the lungs in the thorax, and the abdominal viscera, but in an especial manner with the stomach. Thus, the gout is generally preceded by indigestion, borborygmi, and costiveness; the appetite is sometimes worse, but for the most part keener before the paroxysm; and generally if a gouty patient is desired to reflect, he will remember that some particular affection of his stomach appeared before the fit, though he will not of himself mention it, as at other times they are so used to it.

These symptoms shew, that the gout affects the parts of the system, chiefly by means of the nervous

nervous system, which is confirmed by what Sydenham so much observed in his own case, viz. that severe study induced it; and the approach of a gouty paroxysm is generally attended with a confusion of imagination; while, on the other hand, greater clearness than ordinary is felt on its retreat.

I knew a professor of great application to his particular branch of science, who has often told me, that, when he had any difficult problem to be resolved, he generally found he could do it with most clearness and perspicuity when the fit of the gout, to which he was very subject, was going off; and accordingly he reserved it till then. I believe we may add, as a mark of the gout's more particularly affecting the nervous system, that a fit of it is preceded often by a greater stimulus to venereal pleasure.

The gout often leaves the joints, and, seizing on the stomach, lungs and brain, induces vomiting, asthma, and apoplexy; whereas, so far as I have been able to learn from my own practice, or the information of practitioners, the rheumatism never recedes into the internal parts. From the following case, the sciatica seems to arise from both combined. I applied a blister to the sciatic, which removed the pain; but it immediately

mediately attacked the stomach with vomiting and pain, for which I ordered hot stomachic medicines. These removed the pain, but that only in proportion as it returned to the extremity. This method would have been very improper in a simple rheumatism. To sum up what has been said, the rheumatism is an *accidental disease*, not owing to any particular predisposition, nor propagation from parents to children. It is topical, and never affects the nervous system.

The gout is, on the other hand, a *constitutional disease*, is general, and affects the viscera and nervous system.

Having thus, I think, established the distinctions between gout and rheumatism, I shall conclude with observing, that the two diseases are not, as many have imagined, commutable; that which is rheumatism in young persons, being turned into the gout in old.

I indeed allow that the plenitude and crassitude mentioned as particular habits producing the gout, by Boerhaave, may sometimes give rise, in some measure, to rheumatism; and that persons of such habits may afterwards, when they become old, be seized with the gout.

We come now to distinguish between rheumatism and scorbutic pains; and we may first of

all observe, that these pains are never in any danger of being confounded with the acute rheumatism.

The scorbutic pains may be distinguished by the marks of a scorbutic acrimony in the body at the same time, as lassitude, fetid breath, bleeding gums, livid blotches, vibices, &c. or the patient's having been long exposed to the causes known to induce scurvy, as animal food ill-cured, want of vegetables; or even if the pain have come on after a scurvy has been cured, without any cause which commonly occasions rheumatism, we may attribute it to the remains of that first-mentioned disease.

In order to distinguish venereal pains from rheumatism, we may take notice that the bones are chiefly affected in the middle, and not painful on handling; and though sometimes it may be found that joints and muscles are affected with pain, from this cause, yet, as in the case of scurvy, if venereal symptoms have preceded or attended, we may be sure of the pox being the cause of these pains.

With some degree of propriety physicians have considered the tooth-ach as a species of rheumatism, for it affects the membranes of the muscles of the jaw, and thus resembles it in its seat.

The

The symptoms are similar; and very often the same method of cure answers; but still it differs remarkably in this, that it always, I imagine, proceeds from the acrimony of a carious tooth.

In order to explain the distinction between the *lumbago* and *hæmorrhoidal*, it will be necessary to take notice of the Stahlian doctrine of diseases.

The Stahlians imagine all diseases arise from plethora, and are attended with a tendency to hæmorrhage; and hence a kind of disease is established by them, which they call a *congestion*, when this tendency is not sufficient to bring about the hæmorrhagy; and of this kind, say they, is the rheumatism, where the *molimen hæmorrhagicum* is not sufficient to produce an actual discharge of blood. Thus far they are right, that hæmorrhagies are generally preceded by pains, resembling the rheumatic; as a nasal hæmorrhagy is often preceded by such pains in the neighbouring parts of the head, hæmoptoe in the thorax, and the hæmorrhoidal or menstrual flux, in the parts near the seats of these fluxes, and the back in particular. The *lumbago hæmorrhoidal* is known from proper rheumatism, by being succeeded by the hæmorrhagy, and being periodical and attendant upon it.

Of the Cause of Acute Rheumatism.

Having thus, I think, thoroughly distinguished this distemper, from those other complaints with which it may be confounded, I shall proceed to consider the proximate cause of it, confining myself to the *acute rheumatism; as indeed I have done, in a great measure, in what has been already laid down relating to this subject.

The acute rheumatism, then, is of an inflammatory nature, as appears from the fever, with which it is attended. The siziness of the blood, the pain, tension, and redness of the part affected.

Inflammation in general consists in the increased impetus of the blood into obstructed vessels.

This is the common idea; but Dr. Haller has of late raised some objections to obstruction having a share in inflammation. He has made some experiments by throwing ligatures over blood-vessels, and did not find any inflammation succeed: in his microscopical observations on obstructed vessels, also, (he tells us) in live animals, he discovered no inflammation; and he observes,

observes, that none is produced by tying the umbilical cord in children. I cannot but think, however, that Haller has not been very accurate in his facts: for, let any man pass a ligature about his finger, and he will some time after feel pain, tension, and redness arise; and if a ligature is kept for some length on the leg or arm, the blood, if drawn from it, will be found sizy. I cannot say that I myself have ever made this trial, but it is well ascertained.

We have the strongest analogy for obstruction taking place in rheumatism; for corns, callus of broken bones, the deposition of chalky matter by the gout, and eschars, (in all which the neighbouring vessels are obstructed) are attended with pains similar to rheumatism; and, like it, they encrease and arise on a change of weather, the approach of heat, or the heat of the bed, where there is a rarefaction of the blood in the part. As cold is the common occasional cause of rheumatism, the obstruction is produced by its constricting the surface; but we must allow to Haller, that obstruction alone is not sufficient to excite inflammation: there must also be an increased impetus of the blood; for the Bellinean doctrine is now generally given up. What is then the peculiar circumstance in the

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obstruction that takes place in rheumatism, that produces this increased impetus? It is that irritation given by the spasm, attending the obstruction. Rheumatism is commonly induced by cold being applied to a part which has first been heated, and consequently had the blood in it rarefied, and its vessels distended. This præternatural distension has evidently a tendency to produce spasm and consequent irritation; for, in the case of hæmorrhagy, the distension of the vessels would not be sufficient of itself to occasion the flow; but, by inducing spasm, it gives an irritation, and increases thereby the impetus of the blood, and thus the discharge is produced.

There is therefore, in rheumatism, an irritation from the sudden contraction of over-dilated vessels: we also find the dilatation of contracted vessels to produce this disease; as the sudden application of strong heat after cold; and this is the reason why it, and all inflammatory diseases, are as common in the spring, immediately after the cold weather, as when winter succeeds the hotter seasons.

In the same manner, though, in the tooth-ach, the acrimony of the carious tooth produces an inflammatory diathesis; yet this acrimony will often

often subsist, without occasioning pain, till the application of extraordinary heat or cold is superadded.

We have now only shewn that inflammation in general is present, and the cause of rheumatism; but let us enquire what is the peculiarity of the inflammation that takes place here.

Boerhaave* has distinguished the different kinds of inflammation according to the difference in the vessels, in which it takes place; thus the phlegmon (he says) is seated in the sanguiferous capillaries, or those of the first order, the erysipelas in the second kind. A third species in a † third sort of vessels. This is mere theory, and is not in the least supported by fact or observation. I am rather inclined to consider inflammation as differing, according to the parts in which it is situated, viz. *phlegmon* is situated in the cellular membrane.

This appears by suppuration, which is alone the produce of that species of inflammation, being

* Aph. 122. Boerhaave's opinion concerning them.

† Boerhaave calls the cause of rheumatism, “ *Inflammatio in arteriis lymphaticis membranarum.* ”

being always placed there ; erysipelas in the *rete mucosum*, between the skin and cuticle, producing blister, which has its seat there. Now, the inflammation in rheumatism has its place in the more compact membranes of the muscles. It does not produce any suppuration, unless by communicating inflammation to the cellular membrane. This Boerhaave has observed ; yet it occasions the effusion of a peculiar fluid.

With regard to the tumour attending all inflammation, I cannot determine whether it is merely owing to distension or the effusion of some liquor ; but I begin to think extravasation much more common than is generally supposed.

Lieutaud, one of our latest practical writers, mentions, that he found such an extravasation of a fluid in many dissections of morbid bodies that had been affected with the rheumatism ; and Storck mentions, in his *Annus Medicus*, some cases of rheumatic pains which (he says) in vain he had long attempted to remove by producing a reabsorption, and afterwards agreed with the surgeon to lay open, when there was a quantity of gelatinous liquor discharged from the affected part. There is something in De Haen's Chapter

ter *De Morbo Coxario*, of the same kind ; but he has not been sufficiently accurate on the subject.

I believe, in the patients in this house, at present, there are some instances of this extravasation.

Is there any acrimony or *lentor* in the rheumatism ? Though acrimony excites rheumatic-like pains (as we have seen) in other diseases, as tooth-ach, pox, scurvy, yet we have excluded it from the definition of rheumatism ; and it is evidently no cause of it, since it is induced by cold ; and if it be said, that by exposure to cold air, some morbid matter may be inhaled, I answer that the application of cold iron to an over-heated part will as infallibly induce the disease, as cold air. With respect to *lentor*, this was a state of the fluids, in inflammation, first introduced, or at least supposed, by the Cartesians, and adopted by the followers of Bellini and Boerhaave. The only argument from fact in support of its existence, is the appearance of the inflammatory crust in inflammation. As this doctrine is beginning now to lose all ground, I need not rest long on the confutation of it ; suffice it to observe, that this inflammatory crust is sometimes perceived, when there

there is no inflammation, that there is as much of it in the blood in the healthy state, but that inflammation has a power to separate it, or at least to make it separate; and that it is no cause, but an effect of inflammation, since, on the beginning of it, or immediately before, the blood has no such crust; and, on the application of a ligature for some time, (as above) it is produced.

Of the Cure of Acute Rheumatism.

The chief indication of cure is to lessen the impetus of the blood, or, as some would express it, to take off the irritation in the parts.

With this view, plebotomy has been universally preached, since physicians began to distinguish this disease from others; but this practice has been carried to the greatest length here in Scotland. I have known in this country both arms set a bleeding at once, and 12 oz. or 1 lb. taken from each. There can be no positive rule laid down, with respect to the quantity of blood to be taken: it must be determined by the degree of fever present. Boerhaave mentions the appearance of the crust, as a mark to continue the bleeding; but this will continue after the fever is almost gone, and when bleeding would be entirely

entirely unnecessary. Sydenham thinks we should repeat the venæsection four times, and a late writer advises it five times. Dr. Pringle, a Scotch physician, though he does not determine the quantity or the number of times, seems to lean with his countrymen to copious bleeding. The reason he gives for it is, that rheumatic patients are always found to bear it well. Huxham, on the other hand, in his Epidemics, approves of a spare use of this evacuation; and the French now (though we at first seem to have learnt the practice of large bleeding from them) are of the same mind. Thus Lieutaud approves of little bleeding, and adduces the experience of Marquet, who, having at first practised profuse phlebotomy, found that it protracted the complaints of his patients for years; and that, by becoming afterwards more sparing, he had often cured the disease in eight or ten days. To give my opinion on this matter, though I allow that blood is very easily repaired (a common argument adduced by the advocates for the copious use of phlebotomy), yet in some cases I have seen that even this was the case, when much blood-letting and hæmorrhagy were joined; and it induces weakness of tedious and dangerous consequences; so that I can confirm

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Mr. Marquet's observations, by observing that I have seen by such a practice the acute converted into the chronic rheumatism, which, (as I will endeavour to shew in treating of it particularly afterwards) is a kind of torpor, or even almost palsy. For this reason I would recommend bleeding, not in such quantity as to weaken the system, but only to remove the irritation. Hence I think topical bleeding by leeches or cupping, and scarification, is to be preferred to bleeding in the arm; and the cupping and scarification to the leeches, as we can better measure the quantity taken away. There are many cases, however, in which cupping cannot be applied; as when the knees, elbows, or wrists, are affected; and in these leeches must be used. But even here we may go to excess, and hurt the tone of the part. Dr. Pringle, in a note to his second edition, says, that he has seen twelve leeches applied to the affected part for three days with success; but though it very probably has removed the symptoms, I am inclined to think, that, if he had examined afterwards, he would have found some symptoms of chronic rheumatism or weakness induced. I would only apply four or five, and allow them to take as much blood as possible; and this method of local bleeding I have always found

found successful, both in my own practice privately, and in this house. Last year we had a good many instances of it here.

It may be observed, that the bleeding does not act by revulsion or derivation; otherwise, by being performed at a distance, it would be most efficacious; nor by evacuation of morbid matter, as we have proved that no such thing is present.

Let us now see the different internal remedies in rheumatism. *As to purging;* in this disorder, it is now generally agreed, that the medicines used with that intent should be of the antiphlogistic kind, and not acrid, as neutral salts, &c. It is evident that Sydenham was of this opinion; and though he was unacquainted with the milder cathartics now known, we find that he prescribed the mildest he could. Pringle does not use them; and Lieutaud says, he would only approve them towards the end of the fever.—Mead recommends them, “*nisi febris obstat.*” For myself, I do not find by observation that cathartics have any efficacy here. But as costiveness is an attendant on rheumatism, and stimulates the whole system, I would keep the belly soluble by the use of laxative glysters.

The food should be of the antiphlogistic kind, particularly vegetable, and, to use Dr. Cheyne's expression, the lightest. By this alone, the disease is often cured.

I have now mentioned the use of bleeding, glysters, and low diet, in the cure of acute rheumatism; and I have seen very few instances in which it did not yield to these. However, recourse is often had to another piece of internal practice, *viz.*

Sudorifics; and there is great diversity of opinions with respect to these. Dr. Clarke, a late physician in this place of deserved reputation in the practice of physic, after once or twice bleeding, depended entirely on them for the cure; and was very often successful. He kept the sweating for the space of some days; and though the pains were at first increased, yet at length they were entirely removed. I have however seldom imitated the Doctor in this part of his practice; for there are very few that can bear to have the sweat kept up so long, and fewer are attentive to guard against the accidents of cold, &c. which, by suddenly stopping the sweat, increases the disease. I find, however, that Dr. Brocklesby recommends the same practice: others, again,

again, think it increases the pains constantly ; and we find, that Dr. Pringle, therefore, avoids the use of sudorifics ; and, when he is ordering such medicines as have a tendency to produce a sweat, adds, that we should take care not to give them in such quantity as to have that effect. Lieutaud, also, does not give them a place in his own practice, but only mentions them as given by Marquet. For my part, I would not be alarmed at the increase of the pains at the beginning of the sweat, because the fever is then increased ; but if, after nine or ten hours, they continue greater, and the pulse does not become softer and slower, the sweat must by no means be urged farther ; for, when it was, I have seen it bring on a violent fever. A great deal of the advantage of sudorifics will no doubt depend on the carefulness of the patient and attendants in shunning the above-mentioned accidents ; a great deal also on the particular medicines employed.

The milder sudorifics, as water-gruel, sage tea, vinegar whey, &c. if they excite a sweat, it will be the safest of any, as it is least apt to excite fever ; though even these, or the most simple diluents, will induce it in some degree.

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Of the stronger sweating medicines, the first I shall mention is *guaiac*, which has been of late much recommended in this disease, and is very proper, in as far as it is diaphoretic and laxative; but as it has a considerable stimulus before it produces sweat, I think it should not be used, except in such acute rheumatisms, as are nearly approached to chronic.

The *volatile alkali*, as it is only a nervous stimulus, and its effects transitory, is safer; but in very acute rheumatisms I still think it dangerous. Lieutaud ranks it among the acrid, which should be shunned, while Pringle gives it in a remarkably great quantity, viz. 10 gr. of salt of hartshorn, every four hours. Indeed it is ambiguous, whether he means it as a sudorific, in that note to his second edition where he mentions this; but it is evident, that in such quantity it infallibly would act as such. *Antimony* has been given in the rheumatism, merely to raise a diaphoresis; but it is hardly ever useful, unless it be made to act as a sudorific. Though this medicine increases the action of the heart and vessels, yet, if it has a specific quality of removing the febrile spasm, as I believe it has, it deserves the preference to any of the acrid sudorifics.

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If this be allowed, what are the preparations of antimony to be preferred? Dr. Huxham recommends the *vinum emeticum*; but it does not answer with me, nor other physicians that I know, of more practice. In small doses it does not affect the skin; and in large it produces vomiting, and is thrown out immediately on its arrival in the stomach. The *tartar emetic* is preferable, but it is liable to the same objections in a lesser degree; and therefore I would choose the sulphureo-reguline preparations, and of those chiefly James's Powder; since no imitation we have been able to make of it has been equally efficacious.

Dover's Powder, consisting of ipecacuanha and opium, is given in rheumatism; but as it is very acrid, it aggravates the acute rheumatism, if it does not carry it off, as I myself have seen. Another objection to it is, that opium in general, though by lessening the sensibility it for a time removes the pain, yet (whatever be the reason) in all inflammatory cases, and consequently here, it makes it recur again with more violence: these are the acrid sudorifics, with my opinion of them. With regard to those of the cooling and sedative kind, as *nitre*, *volatile tartar*, *Glauber's salt*, and the other neutral salts, they are from that quality

lity applied in rheumatism, as well as all other inflammatory disorders. To those Pringle joins the exhibition of *camphor*, which, though acrid, is sedative, and may therefore be proper. That author, however, gives these medicines so as not to sweat, as we before observed; and, in this, late practitioners generally agree with him. I find, on the other hand, that Dr. Brocklesby uses *nitre* in very great quantity. He desires two drachms of it to be dissolved in 2 lb. of water-gruel, and orders this to be drank in such quantity, as that 3x. may be taken in a day. As I know no case where this has been tried, I can only say, *fiat experimentum*; though I own I suspect there are few who could take in so much; since I have known, in some instances, 5iv. purge, and in others even 3ii. excite vomiting. Last year two countrymen got by mistake from a laboratory in the town 3x. of nitre, instead of Glauber's salts, and both swallowed it: one of them was immediately made free by vomiting it, but the other continued for some time with severe pains in his bowels, and purging.

Though *the bark*, by its tonic power, aggravates the inflammatory symptoms, yet, when the spasm is in some degree taken off, which is

judged of commonly in the proper separation of the urine, it is recommended in acute rheumatism, and may be used, as it will tend to prevent that torpor which, when we come to treat of the chronic rheumatism, we shall see that the disease is apt to induce. I cannot, however, speak on this head from my own experience.

Among the external remedies used in acute rheumatism, *warm fomentations* have been applied, as in all other pains: but we now find from experience, that they are hurtful in the beginning, while the surface is constricted, as their heat stimulates. Dr. Storck, though he disapproves of warm dry applications, recommends cataplasms of poppies and hyoscyamus: but though such narcotics might alleviate the pain in the mean time, I would disapprove of them, for the same reason as in the case of the internal use of opiates in Dover's Powder.

Embrocations of spirituous and acrid substances I would disapprove of, as they are apt to increase the inflammation; and, by their odour, they prevent leeches from being applied to the parts affected.

Blisters are very commonly used, and may be serviceable, by taking off the spasm of the part;

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but I never use them, both because the pain is so apt to remove from one place to another, and because they stimulate at the same time, and also prevent topical bleeding.

Thus much for the cure of the acute rheumatism.

OF THE CHRONIC RHEUMATISM.

AS the acute rheumatism may subside in a great variety of degrees, and runs gradually into the chronic, it may sometimes in practice be difficult to distinguish them from each other. The principal marks are,

1. That fever is absent in the chronic rheumatism. This, however, is not at all certain; for if it were present to-day, and disappeared to-morrow, we could not from thence conclude that the acute had changed into the chronic.

2. That the blood is not fizy in the chronic. Dr. Pringle at first supposed that it was so in every rheumatic case, and considered it as a test of the soldiers being really sick, or only feigning themselves so. He is now convinced that this

is not the case; and I am certain of it from experience.

3. That, in the chronic, the swelling and redness of the pained part are gone.

4. Though it is true that the pains in chronic rheumatism are often aggravated by heat, yet when such aggravation does not arise from heat, we may be sure the disease is not the acute.

Let us now see what difference there is in the nature of these two kinds of rheumatism: and,

1. Though the spasm in the part affected is not entirely off in the chronic, as appears from the rigidity of the part; yet it is not so great as to give the degree of irritation that excites inflammation.

2. In the chronic there is always a torpor in the vessels, as has been already hinted, and appears from the degree of palsy often attending it. Indeed there appears to me a very great affinity between these two diseases; for palsy is also often preceded or attended by it. Vide Du Haen, *de Morbo Coxario*. Storck, in that chapter of his *Annus Medicus*, intitled *De Paralise* and *Apoplexia*, evidently describes our disease. Linæus shews how ill they can be distinguished;

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and, lastly, colics from the dry belly-ach of the West-Indies, to our *cholera morbus*, are as often attended with rheumatic as paralytic symptoms, or with a mixture of both, as may be seen in Huxham's *Opusculum de Colico Damnoniense*, a particular species of colic in the cyder countries, arising from the too frequent use of that liquor. The sum of this is, that such rheumatism has always inflammation joined to it, while the chronic has a paralytic tendency.

How the acute rheumatism produces this paralytic tendency, or torpor in the chronic, is no easy matter to determine, as it depends on the nervous power, whose nature we are by far too little acquainted with.

I shall only observe, that we commonly consider the sensorium as always active with respect to the organs of motion, as passive as to those of sense. I could, however, produce instances where the contrary of both happens, viz. the organs of motion communicate effects to the sensorium, and the senses are acted on by it. Now this being the case, resistance at the nerves of motion may be propagated to the sensorium, and palsy by that means produced.

Of the Cure of the Chronic Rheumatism.

The indication of cure is to take off the stricture, which is to be done by exciting the action of the torpid nervous system in general, and that of the vessels of the part in particular. From this it is evident, that whatever has a tendency to weaken, will be improper; and consequently both topical and general bleeding. Though in a recent chronic rheumatism, where it was to be suspected that all the inflammation was not gone, I would use topical bleeding with leeches.

Other evacuants have been used, chiefly purgatives, of which Dr. Mead recommends the mercurial kind; but in this I have followed him without success.

Of the internal stimuli, the same are used as recommended in the palsy. Our famous Dr. Pitcairn was particularly fond of the oil of turpentine (belonging to the balsamics), which he used to the quantity of 3 ii, in obstinate chronic rheumatisms—see his *Pupil Cheyne on the Gout*. Sudorifics may be used, unless when there is reason to think that the sensorium is affected by the distension of its blood-vessels. Dover's Powder has of late been much used with this intent,

intent, and I have seen it of great service; but this is only from its sudorific quality; and it is a question if it is not in some degree hurtful, by its narcotic power. The chief cure of the chronic rheumatism is to be expected from external remedies, as the disease is local. These are enumerated by Du Haen, in his chapter *De Morbo Coxario*, after Hippocrates; and he mentions first the burning the part with a hot iron, a practice much used by the Ancients, and still by the Asiatics. It is probably a very efficacious remedy; but being too harsh for any of our patients in this part of the world to allow of it, it has been neglected, till, of late, a surgeon at Lyons has renewed and recommended the use of it. Dry cupping is used by Du Haen with success; but our want of address here in applying it, renders it inconvenient. The moist is already excluded. Blisters are much more common than either of the two former external remedies: Boerhaave applied them successively to the number of four, and by this means cured himself of an obstinate sciatica. Few, however, of our patients would admit of such a continued use of them. We may observe, that though, for the purpose of blistering, cantharides are commonly used, and is the easiest application, yet Dr. Storck prefers other medicines, and particularly

ticularly ranunculus ; and, I believe, with pro-
priety, as the ulceration remains longer. I have
observed it remain eight or ten days. The same
may be said of the use of mustard, as a blister.

Next to blisters, issues and setons are to be
considered. They have been found useful in
the disease of which we are treating ; but their
operation is not easily accounted for. They are
most commonly supposed to act by the discharge
of some morbific matter ; but the presence of
this has been already denied. Blisters not only
act here as stimulants, but also by the swelling
they excite, which, by occasioning an effusion,
takes off the distension, which is present in the
vessels of the part. Now, it is probable, setons
and issues, by the same means, viz. constantly
unloading the vessels, produce their salutary
effects.

There is no acrid substance almost, which,
being applied to the skin, irritates it, but may
be used, and most of them really have, in the
chronic rheumatism ; so that there is nothing
extraordinary in Du Haen's use of varnish, or a
solution of mastic in spirit of wine, nor his *calx*
viva with soap or oil. There seems to have
been little choice made in the different sub-
stances of this kind ; but there is none which I
would

would prefer to mustard, which comes under this head as well as that of blisters, when applied only so long as to excite heat and redness without swelling. Fomentations, poultice, and the warm bath, may be ranked all together, as their principal operation is by their heat. Baths of warm water are of excellent use, as are those of the mineral thermæ, or the Bath in England, Aix in Germany, &c, which are remarkable for curing the disorder in question. I cannot imagine that the virtue of those springs is in any degree owing to their impregnation, since the substance they contain can be taken in so small a quantity; and I have known cases where the assiduous use of the common hot bath for an equal space of time has been as serviceable. Indeed because the most of patients have more confidence in these warm springs, they continue longer in the use of them, and are on that account more benefited by them.

Poultices or fomentations of the emollient kind, may be thought to be of a particular service, when there is a rigidity in any of the affected parts; but to me they seem only useful in as far as they retain the heat longer than the warm water. Neither do I find that the application of warm water, impregnated with bitters

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and aromatics, have any peculiar advantages; and other late practitioners are of the same opinion.

Narcotics, as the poppy and hyoscyamus, used by Storck, will, I am afraid, be apt to protract the disease, or at least, if the pains be removed, leave the part weakened or deprived of its motion, as I have seen the case from the use of our balsam. *anodynum*.

In the cases given us by Dr. Storck, of the cures performed by *cicuta* (which we will not pretend to rank under the narcotics, its *modus agendi* being quite a mystery), there are some instances of this disease, and I think I have seen it of service here. There is another vegetable, of the poisonous kind, viz. bay-leaves, which Dr. Lan-grish has shewn to possess a considerable power of changing the system, and that may, if pro-
perly exhibited, be useful even internally.

Their external application I have known to be of service; and I am accordingly giving them to a patient in the house at present. Fric-
tion with a cloth or the flesh-brush, is very powerful in exciting the circulation, and the action of the nervous power. It has been known to cure this disease alone; but there are few patients who can be brought to continue that

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long use of it necessary for this purpose, when its effects are so little obvious at first.

Lieutaud, whom we have so often occasion to quote, has suggested still another kind of cure, viz. the exercise of the affected part, which he found extremely serviceable to those patients whom he could bring to try it; a thing not very easily done, as it is so painful at first. I am apt to think, that there is great reason to expect advantage from this; though I never used it as a remedy: because we find, that people who, while labouring under the chronic rheumatism, are obliged, from their occupation, to take exercise, are gradually relieved, as that exercise is continued. This is found to take place in horses. Electricity is the last external medicine I shall mention, and, according to my former proposal, consider its * medical virtue in general.

ON ELECTRICITY,

As applied to Medicine.

THE application of electricity to the cure of diseases, is a subject that has been much canvassed of late; and there are very various opinions

* Vide p. 340, on the Cure of the Palsy.

nions concerning its virtue. In this country it is very doubtfully spoken of. Unluckily, when it was first introduced into the practice of physic, an Italian physician published many notorious falsehoods relating to it, which being discovered by the experiments of his countrymen, tended very much to discredit it. In France, also, a set of physicians and philosophers, having entered into an enquiry into its medical powers, gave an unfavourable account of it; and Dr. Muschenbroeck, in his posthumous works, which, however were finished before his death, disapproves entirely of its being applied to medicine.

On the other hand, De Haen, Sauvages, Wintingham, and others, have, by their experiments, added to several that have been made in this country, confirmed and strengthened the opinion of its virtues; but if we compare the attention that has been given to all these last-mentioned experiments, the diligence with which they have been prosecuted, and that in the eyes of the public, and the testimony by which they are supported, with the inaccuracy of the first facts, against the use of this active matter, we cannot hesitate in determining in its favour.

Let us now see, from different accounts given of it, what are its particular effects on the human body.

1. Sauvages, from trials made on a great many people at the same time, found that, after the machine had been applied, the quickness of the pulse was increased from $\frac{1}{6}$ to $\frac{1}{5}$, but in general to $\frac{1}{4}$. It was from this increase of the pulse's quickness, that Muschenbroeck concluded that electricity was hurtful; but it is well known that there are many cases in which such an effect is desired.

2. Other experiments show that the heat of the body is increased by it.

3. Obstructed menses have been cured; and when there was no obstruction, the menses have been made to flow sooner than their usual period, even while the woman was under operation.

I have some account of this last effect from Dr. Franklin.

4. It restores atrophied or emaciated limbs to the fulness which they naturally possess.

5. It increases perspiration, as we find by all the trials that are made of it; and this is confirmed by its producing constiveness. This Linnaeus observes.

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6. When applied to any of the organs of excretion, it has been found to increase that peculiar excretion. Thus, applied to the tongue, it raises a copious salivation; to the eye, a flow of tears; and to the ear, a greater quantity of ear-wax.

7. It is found to recall any discharge which is necessary to the health of some people, and even sometimes produces such eruptions, where the patient had not been used to have them before.

8. It promotes suppuration.

From all these effects it appears to be a powerful stimulant to the sanguineous system; but every experiment shows that it is so in a remarkable degree to the nervous; for it always (when it does not produce a perfect cure) restores motion while it is acting. Hence its use in palsy, so much confirmed by the experience of Sauvages and others. That author, out of fifty paralytic patients, on whom he tried it, cured twenty-five, and the others were all remarkably relieved by it. Hence, too, I have ordered it in chronic rheumatism; and as a proof of its use in that disease, see De Haen, *De morbo Coxario*. When it has failed, I imagine there has been some other disorder at the bottom than that tor-

bulous pain which is to consider as to fixed por-

por I have mentioned as taking place there. The want of success may arise from two faults in the application of electricity, viz.

1. From not applying it for a sufficient length of time. By a review of the cases in which it has been found beneficial, there will scarce any be observed, where it has had any good effect for some days. Many cases have only been relieved after its use for weeks together. Some have required months; and De Haen mentions its being used for six months, without any advantage, and after all, by persisting in using it, performed a cure.

2. From not using a sufficient degree of it. De Haen has used it to a degree above any thing ever attempted in this country, viz. for one quarter of an hour together, during which time he gave one hundred shocks; and that author says, that it never does harm, in whatever degree it is applied.

In this, however, I am persuaded he goes too far; and I think there is a case which proves it, related by himself, though not in what he writes concerning electricity; for the patient died soon after its application, to which it seems evidently to have contributed.

In a very small quantity it kills birds; but I have heard of an instance of a horse being killed by

by it in England, when greatly excited; and there can therefore be no doubt that it can be brought to destroy the life of a man. It is reasonable to think, from its power in increasing the circulation; and I believe it is found, that people who have died soon after it, had an extravasation in the brain. There was a patient in this house some time ago who was seized with apoplexy, and died soon after being electrified, where it did harm, I think, evidently.

Hence, in palsies arising from compression, it ought to be avoided; and, on this account, whenever the *sensorium* is affected, we should proceed very gradually in the use of it, first by sparks, alluring, as it were, the nervous power into the part, and thence proceeding into shocks.

ON THE DIFFERENT RHEUMATIC CASES.

AS we have given our sentiments pretty fully on the cure of rheumatism (of both kinds) as its nature and causes, we shall here make some observations on the different cases labouring under this distemper, and on the manner in which we have treated them.

I. Barbara

I. Barbara Campbell.

This is the only case of acute rheumatism which has been under our care; and we have an opportunity here of seeing the most common causes of the disease, cold and wet. Though it is two months since she was seized, yet, when admitted, she had all the symptoms of a recent case, as fever, &c. This is very common to persons of her condition, who are liable to have the causes continued. On this account, I ordered bleeding in the arm at first, and a laxative glyster to remove the costiveness with which she was affected. These had both the desired effect; so that her pulse, on the 10th of December, was quite settled. I then proceeded to topical bleeding by leeches, which were applied for three days successively (December 9, 10, and 11), besides two that took a little blood on the 8th. The pains were by this means relieved; but, as the disease still lingered in the body, I did not persist in the use of the leeches, lest the chronic rheumatism had been induced; but had recourse to sudorifics of the antimonial kind. The powder which we prepare in the house was first given, but with no effect; I therefore ordered Dr. James's, which, as appears from

the report, produced sweat. There was another medicine ordered, viz. the *flos sambuc.* according to the advice of Dr. Storck. This rendered her urine more in quantity, while it was also paler.

II. *Alexander Heron.*

This patient, whose case is a chronic rheumatism, can afford little room for observation, as he was so short a time under our care. We can here, however, see the same general causes as in the former case, viz. cold and wet; and from his back, hip, thigh and leg being affected, it is to be observed that, in labouring people, these are most commonly the parts on which the pain fixes: the muscles then being chiefly exercised, he was either quickly relieved by the *oleum volatile*, or rather, I am apt to believe, tired of the house.

III. *Isabel Mac Arthur.*

This patient, though at a time of life when the sanguine temperament does not easily manifest itself, viz. 45 years of age, yet is evidently of that constitution; and her disease, when she first came into the house, was of the acute kind: topi-

cal bleeding was therefore ordered, and that by means of cupping, as we found that leeches would not fix on her; but though repeated, and the usual quantity of blood taken, no relief was given. From this I concluded, that the distemper had now become chronic. The syrup of horseradish, and the *oleum volatile*, were now ordered, as also a blister. Some time after, she was seized with colic pains in the night, which, however, were not, I think, owing to the syrup, as they went off next day, and did not return, though the syrup was repeated. Her menses, after this, came on the 12th; some days after which I ordered cataplasms of mustard to be applied for the space of two or three hours; and if these prove not effectual, electricity shall be used.

IV. William Bell.

It was very difficult to investigate this patient's case; but at length it appeared to be a chronic rheumatism, attended with such paralytic affections as serve greatly to illustrate the principles we laid down concerning the nature of the disease. He was a striking instance of the use and efficacy of the *volatile oil*, which excited heat and sweat over his whole body.

V. Thomas

V. Thomas Hamilton.

This patient's complaints are of the rheumatic kind, as I conclude from his age, which is rather young for the gout, his manner of life, and his habit of body, which is very thin. He is affected with that particular species of rheumatism, called the sciatic, so very obstinate, both from the part being more exercised which is affected here, than any other in the body, and because it is deep-seated, and consequently more out of the reach of medicine. At the last attack of the disease, I ordered topical bleeding, but without effect, after the antimonial sudorifics were given: first, the powder prepared here, without any advantage; and then James's Powder, which at first seemed to give relief. As a blister had, at the beginning, been applied to no purpose, I did not repeat it for some time; till, recollecting Dr. Boerhaave's practice, I ordered a second; but neither did this answer any better. He is now drinking the decoction *lignorum*.

K k 2

V. Margaret

V. Margaret Stewart.

This, at first, was no proper rheumatism, but seems now to have put on that form. She has used various embrocations, without reaping any benefit, but had some relief from a blister. I have ordered bay-leaves to be applied, as was hinted above.

ON THE HYSTERIC DISEASE.

THERE is no disease in the consideration of which more difficulties occur, than that of which we are now to treat, whether we regard its theory or its practical treatment; and it is a subject that we are not assisted in by Boerhaave, for it has not entered into his system either in his *Aphorisms*, or that posthumous treatise, lately published, “*De Morbis Nervorum*.” Indeed that treatise is much more properly employed about the disorders of the sanguiferous than the nervous system. Other authors have entertained so various and different opinions relating to it, that it will, I imagine, be better to lay aside all observations upon them, and proceed entirely on my own bottom, than, by entering into any particular criticism, embarrass you with such discordant notions.

In

In treating of the Hysteric Disease, I must either consider it as appearing always under one form, and by that means differ from others who have written concerning it; or else, by agreeing with them, and making it appear in such a diversity of manner, without any certain distinguishing pathognomonic, leave your ideas as indistinct and confused as such an account must produce.

The first is the method I propose to embrace, however difficult; and therefore I must observe, that though our disease is often preceded, and, as it were, announced by a variety of symptoms, yet its own proper form is as follows:

It begins with a perception of a swelling in some part of the lower belly, seeming of no great size, not exceeding that of an egg. This is sometimes attended with a tumour, but much more frequently a retraction of that cavity, particularly the navel: from thence it ascends to the stomach, when it is also attended with a distension either of the whole or some particular part. After this, proceeding along the œsophagus, it arrives at the pharynx, and, resting there, impedes the speech and respiration, while at the same time there is along with this an affection of the *sensorium commune*, loss of the external senses, or,

or at least a hebitude of them, particularly sight and hearing. This is succeeded by a profound sleep, accompanied with involuntary motions, which however subside, and leave the sleep still more profound. In that condition the patient continues for some time, but, by degrees, awakens with sobbing and sighs, and becoming gradually better, at length is restored to the state in which she formerly was.

These are the only proper symptoms of the Hysteric Disease; and thus far every body would agree with me, that, where they are present, so is this disease also. I only go farther in saying, that they are the only pathognomonic signs: not that I will assert that the presence of them all, and in the degree above described, is absolutely necessary to constitute hysterics; for these symptoms are peculiar to certain subjects, viz. chiefly females, and particularly those between the age of puberty and fifty, or from the time of the first appearance to the stopping of the menstrual discharge, virgins more than married women, and, of the last, the barren more than the fruitful.

Our sex is not, however, exempted: they attack sometimes men, at the prime of life. ^{2nd and 3rd}

That

That temperament called the *sanguine* or *sanguineo-succulent*, predisposes to the disease; so that the women of a strong make, called *viragines*, are most liable to it; and such as have a ruddy complexion, thin pellucid skin, and are subject to haemorrhagy, or copious and frequent menstruations; and of a disposition of mind very sensible to pleasure and mirth, and passions that easily shift from one to another. It is commonly said to be a distemper of the idle, voluptuous, and luxurious; and it is true that such, if they also possess the proper temperament, are more subjected to it than others; but it is also true that others, if they possess that temperament, may be seized: thus I have seen it often in servant-maids used to industry and hard labour.

Besides this, it is easily induced, by the sudden application of occasional causes, without any other predisposition, except that of temperament. These are chiefly, strong passions, as joy, fear, but most of all, anger; and when excited by these, it often goes off, without the patient's ever relapsing, or very seldom.

Now, I say, that if those particulars of temperament, &c. take place, the disease may occur, though all the above pathognomonic are not

present; for these appear in all possible degrees, and more or less completed and combined together. A ball often arises, and continues fixed to one part of the lower belly, without proceeding farther; sometimes it gets the length of the stomach, and ends there, producing vomiting; sometimes it ascends to the *gula*, but does not affect the *sensorium*: sometimes it is first, and apparently solely affected; and finally, sometimes there is only an obscure affection of the lower belly, attended with delirium. Let us now see the preceding and attendant symptoms of which we spoke above.

In the head these are, an *obnubilatio sensuum*, fleeting and transitory passions, a violent pain in the forehead, called *clavus hystericus*, tremors, and even paralytic affections.

In the thorax, a palpitation of the heart, difficulty of breathing, distinct from that occasioned by the *globus*, or ball, and a sense of constriction at the insertion of the diaphragm, *sputatio aquosa*, vomiting and flatus. In the lower belly, a distension of the side, and a very peculiar palpitation of the lower belly, called a rising of the mother, *borborigmi*, a violent contraction of the sphincter ani, so as even to refuse the admission of injections. At the same time the kidneys consent,

consent, and the urine is sometimes stopped, sometimes discharged in great quantity, but always limpid and tasteless.

Even if these symptoms just related should appear in persons who have the proper temperament after the occasional causes, especially if they have been affected with the disease before, we may reckon that they labour under hysterics.

But if, on the contrary, a person should be troubled with frequent pains, flatulency, and acidity, of the stomach, generally attended with costiveness, frequent *borborigmi*, swelling of the hypochondria, and particularly the left, and continued fear and dejection of mind, the difference, I think, is very evident. This we call *hypochondriasis*. This set of symptoms is also confined to certain subjects, but these are also very different from the hysterical.

They are mostly men on the decline of life, past 35, of the melancholic or atrabilious temperament, having black and crisp hair (while we ought to have observed that the others have soft faces, or red, generally). They are liable to venous plethora; and their mind is more slow, but judicious, steady, grave and sedate.

The complaints come on very slowly, and

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often from internal causes ; are much seldomer cured, so as not to recur, and are properly the hypochondriac. This hypochondriac malady is now generally considerably as the same, however, with hysterics, though to me they appear to differ as much as any two diseases to which the human race is liable.

The habits of body on which they seize are very distinct, and their symptoms as much so. In the hysterick, these are strong spreading spasmodic motions affecting the common *sensorium* ; in the other, they are perfectly different, being weak and confined ; yet I allow that they may approach each other. The spasm in the *malum hypochondriacum* may arise to a greater degree of strength, and those in the hysterick become weaker than ordinary ; which last happens frequently, when the disease has often recurred. But, indeed, in the decline of life, the hysterick is often absolutely converted into the hypochondriacal disease, because then the sanguineous constitution is changed towards the atrabilarious. But again, the symptoms related as belonging to the hypochondriac, often accrue from a great variety of causes, under which we may reckon the following : and these are not applied to either disease.

1. They

1. They are frequent in young men, at their *acbmē*, especially when they are growing fast. This I myself experienced, at that time of life when I grew near a foot in a year, and was much troubled with acidity, and threw up the oily parts of my food often in the form of a pure oil.

2. In the *chlorosis*.—The symptoms here are generally, but very improperly, all reckoned hysterical; for we shall find that they are neither belonging to that, nor the hypochondriac disease.

3. In menstrual obstructions.—These two are called hysterical; but there is often none of the requisites which we have mentioned to that disease present: neither, however, are they of the hypochondriac kind.

4. In obstructions of the hæmorrhoidal flux, when that discharge is not become necessary to the health.

5. In the gout, which we formerly mentioned to have an evident influence on the nervous power.

6. In the *nephritis*, whose nature is not unsimilar to the last. In this disease, the symptoms resembling the hypochondriac are not enough attended to. I knew a boy who had for

three years been troubled with flatulency, pain, &c. in the stomach, *borborizmi*, gripes, &c. and one night he was seized with a pain in the groin, which passed down the thigh, together with swelling of the left spermatic cord and testicle; which symptoms were extremely puzzling, but disappeared on his discharging a small stone.

7. In intermittents improperly stopped.
8. In the case of repellent eruptions. I knew a person who had the complaints we are speaking of alternately, with the appearance of a small scurvy spot on the wrist.
9. After severe evacuations, *tabes dorsalis*, diarrhæa, and dysentery.
10. Intense grief.
11. After severe application to study. This I have often found to happen to myself.
12. From various affections of the abdominal viscera, particularly schirrhous.
13. Even after acid food has been taken in. How absurd is it to complicate all this with the hypochondriac! and how much more, to join them and it both to the hysterical disease!

What is commonly called low spirits, viz. dejection of mind, languor, and listlessness; tendency to fear, anxiety about every thing of doubtful

doubtful event, irresolution, &c. are very common in all these stomach complaints; but there is, I believe, a state of mind peculiar both to the hypochondriac and hysterick disease.

In the first, a love of solitude predominates, and the mind is occupied about one particular object of its fear, together with a wrong imagination with respect to that. In the latter, again, the mind passes from all the different fears and false imaginations to delirium and mania; but the passions are of short duration, changing suddenly from the pleasant to the painful, attended with quick alternations of sighing and laughter, without evident cause.

I employed my last Lecture entirely on pointing out external marks, abstracted from all kind of theory, by which the hysterick malady may be distinguished from other apparently similar distempers; a matter of very great importance in itself, and which I am the more full upon, as it is in general so little attended to. We shall now enter upon the nature of that disease.

Or

OF THE NATURE OF HYSTERICS.

MANY modern writers have fixed the seat and foundation of hysterics to be always in the uterus. Dr. Astruc, the latest writer on the subject, carries this matter, I believe, farther than any other body has ever done: for he not only says, that that viscus is the first part of the body, affected with the spasm, but also alledges that an absolute motion is felt in it. This is a thing, however, that is not confirmed by the exactest observations I can make, or those of others; neither indeed do I believe that a virgin uterus is capable of such motions; or, if it were, that they would be distinguished from those of the neighbouring parts. The same author, in conformity to most writers since the Arabians downwards, mentions it as a proof of the uterus being primarily affected, that the fit goes off with a *humiditas* of the *vagina*; nay, some have alledged that at that time an actual *pollutio* takes place. This *humiditas* can only shew the consent of the *uterus*; and for the alledged *pollutio*, it is very difficult for us to make proper observations, or believe the last reports given us on that head: but from the utmost attention,

attention, I cannot find any such thing to happen.

The uterus, however, may give rise to the disease, either in consequence of its being subject to hæmorrhagy, or as it makes a part of the genital system, the action of which is attended with a convulsion of the whole body, so that it possesses a remarkable consent with it. Observations of the dead bodies of patients labouring under hysterics, shew that in most of them the *ovaria* are affected. These are liable to a turgescence, which gives an irritability to the system; and hence a want of venereal pleasure is assigned as a very common cause of the disease. I will readily allow, that this turgescence, by producing such an irritability, may sometimes excite it; but I cannot consider it as a general cause, or hysterics would be a much more rare distemper. We may here observe, that though the seminal evacuation may in our sex prevent the attack of hysterics, it will not have that effect in females, for this reason; that by it the male purpose of the male œconomy is fulfilled: not so of the females; they are also destined for the breeding and bearing of children; and hence evidently we are to account for our diseases attacking young widows,

dows, and barren wives so readily, who are not free of the venereal orgasm.

What has just now been said, tends, you will observe, to shew that the uterus may excite the disease. The reasons follow why we will not allow it to be the only seat of it.

Men, I know from observation, are liable to it, and even such as cannot attribute it to any want of the seminal evacuation. Occasional causes too produce it where we cannot pretend the uterus is concerned; as the passions, a disagreeable odour, and fatigue, &c.

From hence then it appears, that we are not to take the word *hysterics* in its strict sense, as signifying a disease entirely confined to the womb, no more than we are to consider every affection of that part, as hysterics; as the *chlorosis*, and *emanatio menstrualis*, menstrual obstructions, *schirrhous*, dropsy, &c.

From the account given in our last Lecture, it will appear that the hysterick disease is founded on a sensible and irritable habit (for betwixt these a distinction is certainly to be made), and a habit that is calculated to allow the spasmodic motions to spread; a thing not included in either of the two former properties: for it is very possible for a person to have sufficiently violent

violent motions, excited in consequence of irritability in any particular part, and yet have no tendency to propagate these motions over the rest of the body: this you may call movable. These are the causes of the sanguine, and I may say the hæmorrhagic temperament, which is more common in women than men; and because in them there is a monthly hæmorrhagy from the womb (whose consent with the body, and consequently its tendency to propagate spasmodic motions, is so great), their body is more readily attached, not so much from the disease first arising there, as because that organ is a part of the system.

But so much being premised, I now give it as my opinion, that the spasmodic motions in hysterics for the most part have their origin in the elementary canal ; this part of the body is endowed with a degree of irritability in order to fit it for its peristaltic motion. Haller, who has done more on this subject than any body besides, makes it, I think, next to the heart in that property ; and the very appearance of the symptoms formerly described, shews this, I think, sufficiently.

A curious problem may here be proposed; viz. Why does the peristaltic motion, which pro-

ceeds downwards in health, with an inverted course, ascend in the present disease. This I think may be resolved in the following manner. In opening live animals, though we discover the motion under consideration proceeding downwards, yet it is very easily made to take a contrary direction. This especially happens, if by means of a stricture at the lower end of the canal, we contract that part of it; for then the peristaltic motion is immediately changed, and will rise upwards, till, by means of a new stricture, it is again turned towards the first. Now, in the healthy state, the duplicature at the pylorus, and the valve of the colon, forming strictures in the upper part of the intestine, determine their peristaltic motion downwards, while, in our disease, the spasm beginning chiefly on the *sphincter ani, which is violently contracted during the paroxysm, and on the inferior part of the colon, which is capable of great constriction, the motion is made to ascend.

From this solution of the question, we can easily deduce the reason why the spasmodic motion sometimes ascends to the pylorus, sometimes

* If we suppose it to begin at the pylorus, the peristaltic motion of the stomach will be inverted, while that of the intestines, from the very same cause, will continue downwards.

up to the fauces, and sometimes only the length of the valve of the colon. It is because the contraction of the sphincter is sometimes so weak as to be inferior to the stricture made by the pylorus, or at the mouth of the colon, while at others it is sufficient to overcome these, and prevent the reflexion, if I may so speak, of the spasm at these places, which therefore mounts to the pharynx, where it stops. From the consent of the alimentary canal, and in consequence of the mobility already mentioned, the spasms are conveyed to the diaphragm, lungs, heart, and voluntary muscles. This is plain. But the sensorium is also affected: this I will not pretend to explain; but I observe that the insensibility, or apparently profound sleep, mentioned among the symptoms, terminates epileptic as well as hysterical paroxysms, which are the two most considerable general spasmodic diseases. Hence I think what I mentioned in a former lecture appears to be confirmed; viz. that the sensorium is frequently passive to the organs of motion; for the affection of the sensorium does not precede, but is subsequent to the spasms and convulsions in both diseases. I shall soon have occasion to mention a fact, which also illustrates what I said at the same time; viz. that it is sometimes active in respect to the organs of sensation.

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There are instances of persons dying of hysterics and epilepsy, in all of which it was during the time of this insensibility and profound sleep. Persons have been known also to die of such an epilepsy, after the venereal orgasm; and I myself knew a woman, who always after it had such an epileptic fit. Hence the observation of Aristotle is now become so trite, viz. "*Omne animal post coitum triste.*"

It appears, however, that the disease is excited, sometimes at first by the sensorium, from what has been said of disagreeable odours, &c. and particularly violent passions, inducing it.

Without entering into a methodical discussion relating to the different kinds of the causes of the hysterical malady, I have thus mentioned the chief of them, together with the most general ratio of the symptoms: I now proceed to the *prognosis*, and thence to the cure.

The PROGNOSIS.

By the repetition of hysterical spasms, frequently the irritability of the system may be so increased, as in a manner to render the disease habitual, or at least allow the slightest occasional cause to excite it; but any habitual disease must be of very difficult cure, as it is necessary to change what is now become a law of the system: but, besides

sides this, if the irritability be so increased, as to allow the slightest occasional cause to produce our distemper anew, our cure must also be very precarious ; for the slightest trespass in any of the non-naturals may baffle our remedies.

The immoderate use of venery, as it is a matter in which the physician is not consulted, may often have this effect ; but the indulgence or excitement of the passions is still of worse consequence, and is equally out of the power (or at least inclination) of the patient, as well as the physician, to moderate. The hysterick disease can be, and I believe often is, renewed at pleasure. This, I know, is often doubted, but I believe chiefly because it is difficult to explain how involuntary motions should thus be raised, than from any weakness in the evidence for the fact ; but it will not be so extraordinary, if we reflect on the following observations : Merely by recalling to my imagination any piece of indiscretion which I thought I had committed, I have in my chamber, and alone, often blushed as warmly as when the indiscretion was committed. Many laugh by themselves in the same way ; and still more can, by the imagination of mournful scenes, induce a flow of tears. None of these, however, are voluntary motions ; but they serve to shew, that by teaching, as it were, the

imagination to recall, at pleasure, the ideas which can excite such and such motions and involuntary actions, we can in a manner render such emotions and actions subservient to the will. I knew a lady who was subject to violent hysterics, for which, for a long time, I could assign no reason, till at length, on mentioning by chance the name of a man from whom she had received the grossest injuries, she fell into a severe paroxysm, and then it appeared that they always came on when she thought of that person. To nothing else can we ascribe the cases of those on whom the Romish * priests exercised their exorcisms, or those who in this country were accused of witchcraft; the account of whom, on a strict collection of evidences on both sides, I find to be undeni-able.

And now this is the proper place for mentioning the fact already spoken of, which shews the power of the sensorium on the organs of sensation. Take a feather, and by tickling the mouth of any person, of a sensible and movable system, excite the convulsive contraction of the muscles of the face; repeat the same once or twice; then approach the feather near the mouth,

the

* It is to this also that we are to attribute the extraordinary powers of players and orators.

the person will feel the sensation of tickling as much as formerly, and have the same convulsive motions excited.

OF THE CURE OF THE HYSTERIC DISEASE.

FROM what has been delivered, it appears that the cure of the *Morbus Hystericus*, of which we are now to treat, must be very difficult.

In the first place, where we can perceive any evident occasional cause, whether external or internal, which keeps up the disease, it is to be removed; and it may be considered as one indication of cure, therefore, to avoid occasional causes. In an unmarried woman, full of flesh and blood, and who at one time is seized with an hysterick paroxysm, and at another discovers signs of lasciviousness, marriage is evidently indicated; I say marriage; for the use of venery alone will not answer, as was taken notice above.

On the other hand, if along with the hysterick symptoms be conjoined a *fluor albus*, which may arise from a seminal weakness, we are, if possible, to endeavour to prevent too great indulgence in venery. In the same way, when any of the paf-
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sions of the mind are the cause of the disease, whatever excites these is to be shunned.

Thus much in general, with regard to the first indication; the answering of which must be chiefly left to the prudence of the physician, when he sees the patient.

The second indication, is to lessen the irritability of the system, which may be considered as arising from two general causes; viz. a sanguine and plethoric habit alone, or a want of tension, and weakness of the moving fibres.

In the first case, blood-letting is to be prescribed, either before the paroxysm, to prevent it, or during it, to stop any bad consequences it might produce. But though for these reasons I recommend blood-letting here, yet because its repetition encreases the plethoric disposition it is designed to prevent, I would advise, that at every repetition the quantity taken should be diminished.

To the use of bleeding I would add a low diet, but exclude the use of all other evacuations, which either prove ineffectual, or else hurtful, by increasing the irritability. These remedies are of quite an opposite nature to what is proper in the *M. Hypochondriacum*. But now if the irritability arises from the want of tension, a different

different course is to be followed, and we are to order every thing that is fitted to renew that tension. Hence, first of all, the use of good and fresh and cold air is to be recommended. The common air of our climate is excellently adapted for hysterical patients; while soaking in warm rooms over a fire, is sure to increase their complaints: for this reason it is, that in the hottest climates spasmodic distempers are more common and severe than in the more northern. The *Tetanus*, the most violent of this class, is almost peculiar to the torrid zone, while in the same way, in Europe, the hysterical disease, and indeed spasmodic complaints in general, are more severe in Spain and Italy than in France, more so than in Switzerland or England, and, as I am inclined to think, more so in England than with us. *It is, I believe, common for a woman to threaten her husband with a fit in England, which I never knew nor heard of here.*

Next to the freshness of the air, I would mention the cold-bath, which gives a firmness both to the mind and body, insomuch that I have seen timid people acquire courage by it. On both these accounts it is easy to see how useful it must be in hysterics.

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The use of exercise has the same effect. This may be performed either by means of gestation, or walking and labour. The last, however, is to be cautiously dealt with, as it is liable to be carried to an excess, which tends to increase the disease. It is proper here to take notice, that such exercise as employs the mind at the same time, will be most efficacious. I had occasion to know a person who laboured heavily under hysterics, when by her easy circumstances she was enabled to lead an idle life ; but a sudden reverse of fortune obliging her to employ both body and mind, she got perfectly well.

With regard to the medicines indicated here, the first that occurs are those of the tonic kind, of which I shall only consider the bark and steel. The last of these is evidently only proper in the last-mentioned case of diminished tension ; for when there is a plethoric or hæmorrhagic tendency, we cannot give it so as to be astringent, because it might prevent those evacuations that appear to be necessary ; nor yet as tonic, lest, by increasing them, we also increase the disease. The effect of the bark in such cases is not so well determined ; but though pretty similar in its nature, it seems to be more safe.

Among

Among the more temporaneous medicines, as the antispasmodics, or such as compose irregular motions, the theory of their operation, like every thing else that is connected with the nerves, is difficult. Among the last of them it is evident to see two kinds; viz. such as stimulate, and such as are sedative, in our disease there may sometimes be place for both; for there are some cases where the stimulants may be useful in increasing the natural motion; however the sedatives are of principal use; of these I shall mention camphor and musk, which I think preferable to any others.

That camphor is a sedative, though in the ordinary doses it only stops irregular spasms, is plain, both from its use in fevers and inflammation, and because it can be brought to stop the actions of the sensorium; insomuch that I have seen it induce a weakness that approached to death in the human body; and those who have made experiments on other animals; have actually killed them by it. The same is still better ascertained with regard to musk. These two medicines therefore are, in the first case, proper to cure by their repeated use, and in the other, useful in preventing the fits; but like all other nervous medicines, they lose their effects by

N n 2 repetition,

repetition, and should not be given often before the fit, but reserved to its approach.

We shall now speak of that particular species of sedatives called the narcotics, the chief of which is opium. This medicine is of excellent use in preventing the fits. I acknowledge indeed that it may be improper in the first case; as after its narcotic effects it leaves a turgescence, but in the case of tonic weakness it is remarkably fit. It has one peculiar advantage over camphor and musk, that, by producing much more sensible effects, we can judge much better of the time when its quantity is to be increased. In those preceding symptoms that may more properly be considered as a tendency to the disease, it should be generally given and persisted in. There is one inconvenience with which it is attended; viz. the production of costiveness, that, by increasing the irritability of the alimentary canal, may add to the disease. On this account it were much to be wished that the *hyoscyamus* would, as Dr. Storck says, answer all the purposes of opium, and at the same time keep the belly open; but this I find not to be confirmed by practice. Opium itself does not always keep the belly bound, as we shall soon see.

On

On the Case of JANET SEATON, an hysterical Patient.

This patient labours under the true and proper hysterical disease. She is of a temperament sanguine, and tending to haemorrhagy; as we discover both by the *haemoptoe*, for which she was formerly a patient in this house, and by the *dyspnæa*, cough and copious menstruation she now has. The symptoms from the case appear to be of the true pathognomonic kind, as *globus*, profound sleep, &c.

Though such, however, is her temperament, I did not order her to be bled, on account of her copious *menses*, which recur every three weeks. Her diet is from the rules of this house necessarily low. Fresh air in an hospital cannot be obtained, nor exercise; for we are obliged to keep our patients confined in close chambers, lest, by the sudden change of temperature they would meet with in our passages and stair-cases, they should catch cold.

Cold-bathing was not to be attempted, because of the frequency of her fits, besides that I do not find it conveniently applied here; though, if our other medicines do not answer, I intend

intend to have recourse to it after this menstruation.

For all these reasons I have been obliged to confine myself to that part of the cure expected from medicine ; and indeed if I had not wanted to exemplify the disease, and the method of cure, I would not have accepted of her for a patient. As she is under an hæmorrhagic tendency to the lungs, I considered steel and the bark as improper ; and though this had not been the case, these medicines would have required a longer time to shew their effects than we could allow.

Hitherto she has used the antispasmodic kind, but with very little success. Æther is a powerful medicine of that class, but its effects are only topical. I have often seen the head-ach and tooth-ach removed by it instantaneously, and also spasms of the stomach. This last end it evidently served in our present patient ; but we saw that it had no tendency to keep off the fits. After it I ordered camphor, which at first prevented the fit, but made her sick ; and besides, for reasons explained, we cannot judge when it will be necessary to increase its dose. I therefore now prescribed opium for her, which I preferred to the hyoscyamus, as it was tried on her formerly without effect. Besides, in her

case, the opium has had the same consequence that is attributed to that medicine by Storck, as I have also seen it have in other instances. I know, indeed, that these narcotics have a tendency to weaken the nerves; but as their dose can always be increased, this will be obviated. There are many who, by the use of brandy, cure themselves of hysterics; and I am acquainted with a lady, who, in order to prevent them, takes one hundred drops of liquid laudanum thrice a day.

I am, I confess, much surprised that the opium has had so little effect in preventing the fits to our patient. It is perhaps partly her own fault, her condition of life being such that obliges her to exercise, very improper for one of her constitution, and consequently makes her perhaps desirous of continuing here. Many people are of opinion, that this medicine should not be exhibited before, or during the *menses*, because it produces costiveness, and stops the other secretions, and will, they conclude, impede the menstrual flux. I never, however, found this to be the case, but I have on the contrary found opium to increase that discharge; and in our patient, though she has been using it, the menstruation has just now come on at the

the usual time. It is a usual custom to let alone every medicine during their continuance; she has last night omitted her draught, but I have to-day ordered her to continue it. When the *menses* are preceded by, and attended with spasmodic pains of the loins, and cholic pains, it is of excellent use to give the opium two nights before, and continue it two nights after the discharge. This is the case with our patient.

ON A CASE OF OBSTRUCTED MENSES.

The Case of MARY FRASER.

THIS patient's case I have chosen to consider at this time, because it gives me an opportunity of illustrating a distinction established in my first Lecture on the hysterical disease.

From an exposure to cold, she was seized with a variety of morbid symptoms, but particularly an obstruction of the *menses*, which were at that time upon her. This again produced a great many symptoms, which plainly depended on an haemorrhagic tendency to the stomach, and no consent of the uterus with that viscus on the intestinal tube. This appears from the *morbus*

morbis niger in men; a disease mentioned by Hoffinan, and handled in a particular treatise by Tissot of Lausanne. It is a venous hæmorrhagy of the stomach, and is attended with the same spasmodic symptoms, as appear in our present case.

At first she was affected with a cough, pain of the breast, and costiveness, head-ach, and some degree of fever. These however had disappeared, and only the hæmorrhagy from the stomach was present when she came under our care, which returned always at the proper period of the menses. She was at the same time extremely costive, a disorder to which her sex is extremely liable, and which gives rise to many of their complaints.

The first indication here was, I think, to alleviate the symptoms, which was chiefly to be attempted by opium, taking care always to have a view to the costive tendency. This part of the cure is generally palliative; but as the spasmodic complaints evidently promoted the hæmorrhagy, it was of the greater consequence.

The second and most important indication was certainly to produce a return of the course of the blood to the uterus.

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The medicines of the emmenagogue kind cannot, in such a case, be safely thrown in by the mouth, since, by their acrimony or their very quantity, by which they produce the menstrual flow, they also tend to excite haemorrhagy in other parts. This is true of aloes, and the fetid gums, but still more of mercurial cathartics. Topical remedies were therefore to be exhibited, or such as can be applied near the uterus; but here again I must observe, that emmenagogues, even the most efficacious, seldom act unless applied near the natural period of the *catamenia*.

Now our patient was admitted about twelve days before that time with her. On the 15th of last month she complained of a lassitude, which made her expect her menses; at that time therefore a fetid injection was ordered. This, however, had no effect; and no symptoms of menses appearing, opium was repeated.

A curious enough circumstance occurred here, about two days before the menses actually came on: it was this; that there seemed evidently to be a determination of the blood unto the lower branches of the aorta, viz. the mesenteric, from the bloody stools which she then had. Indeed, we are liable to some fallacy in such an observation,

wation, as, during the straining, in dejection, &c. the menstrual blood, then beginning to flow, may be and is frequently pressed out.

The patient's pulse was intermittent all along, till the time of her menstruation; a symptom that may arise from spasm communicated to the heart, as well as any primary disease of that organ or the lungs.

The shivering and feverish fits that our patient was affected with, attended with a short stop of the menses, (added to the appearance of the same, on the diminution of tumours) seems to throw a light on the nature of fever, and shew that it arises from spasm; and that the disappearance of these symptoms after sweating, proceeded from relaxation of that spasm, and * not from any discharge of morbid matter.

I continued here the opium during the menses, for the reasons mentioned before, and found not any bad consequences follow.

On the 27th ult. a variety of her former symptoms appearing, I concluded that they arose from some degree of fever, or were feigned (as I had some reason to suspect); and therefore I prescribed a blister. Even yet she is not quite well, neither did I expect it. Distempers arising

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* Of this more fully, when we come to treat of the Menses.

from such a cause, seldom disappear entirely till after the menses have flowed during three or four periods.

Case of JAMES ALLEN, a Melancholic Patient.

To me this patient, who has now left the house, seems to have laboured under a fit of melancholy. At first, however, he had cold shiverings, and a degree of fever; but these soon left him, and then his only complaints were pure melancholy fears, which indeed were present in a strong degree all the time. I am, indeed, surprised at the fever in this case, since, so far from being an attendant on *melancholia*, it often cures it when it supervenes.

The *proper melancholia* is, on one hand, to be distinguished from *mania*, in which it often terminates, because there is in the first no delirium or inconsistency, unless in the very particular fears with which the patient's mind is distressed.

2. From the hypochondriac disease, by this; that the hysterical disease is either attended with, or preceded by, spasmodic affections of the *prima viae*.

The theory of this disease, like most of our mental disorders, is, I own, entirely unknown to me

me in practice; however, when it proceeds from known causes, by removing these, it may be cured.

These are the gout, suppressed haemorrhoids, &c. I was about eight days ago called to a patient, who labours under a profound melancholy, without any bodily complaints. On enquiry, I have found that he is subject to goutish paroxysms, which alternate, it seems, with fits of *melancholia*. I have therefore begun to treat him as a goutish patient, but have not yet had sufficient time to judge how far such a method will be successful.

Where we cannot, in this manner, trace the disease from any evident cause, I am afraid the cure is entirely guess-work, whether we use the antispasmodic or any other remedies. We may observe that, in the present case, bleeding, commonly detrimental, seemed to be advantageous; and the blister on the head, which again is commonly used, was also of use; yet after all, I fear his disease, or a worse, may recur.

The Case of WILLIAM HAY, a Scrophulous Patient.

SCROPHULA is very commonly and justly reckoned a disease of the *conglobates* or lymphatics.

It is evident, from the diseases appearing externally in tumours of these glands, which are at first moveable below the skin, by the fingers; but still more so from the appearance of the internal parts in the dissections of dead bodies; for then we find the mesenteric glands, and even the *receptaculum chili* and *ductus thoracicus* * affected. True it is, that these tumours that appear externally in this disease, are often fixed and immovable; but this probably arises from small invisible lymphatics. It is also true, that other parts of the abdominal viscera are frequently affected; but this too will naturally happen, if the disease continues for any time, by a communication to those parts. It is undeniable that these lymphatic glands are most commonly and first affected. It appears also to be a disease of the lymphatic juice, as may be gathered from what has been already said. This disease is by most authors reckoned a viscidity, which, for the following reasons, I cannot admit. There is, in the first place, no positive proof of such a viscidity ever taking place in the lymph; and then we find generally swellings of the lymphatic glands brought on by an opposite quality, viz. acrimony, as in the pox and neighbourhood

* And the *thymus* also.

hourhood of ulcerations ; while, at the same time, such swellings are so very moveable, that I have seen them dilappear in the cold fit of a fever, and from sudden fear, or any agitation of the mind, in less than four hours, which seems very contrary to the notion of viscosity or lento. It is true, on opening scrophulous tumours, a kind of *coagulum* has been found in them, but this has only arisen from stagnation.

HAVING shewn that viscosity is not, probably, the cause of scrophula, we suppose it to be a particular acrimony, of whose nature we shall soon speak ; but first let me observe, that this disease is general to the whole body, which may appear easily, both from the organs where it is seated, and from its being an hereditary distemper.

Such distempers are of two kinds, viz. such as are transferred from parent to child, by means of a particular levan or ferment, as in the *lues venerea*, and the small pox. These are common to all habits, and such as the child has in consequence of having his parents particular constitution propagated to him. Of this last kind I take the scrophula to be ; it is sometimes propagated from the father, and sometimes from the mother. I know a family of children, some of whom

whom are like their father, and others like their mother. Those who resemble their father are scrophulous, the others quite healthy ; and this, by the bye, seems to shew, that the visage may point out particular constitutions. What is the particular habit that the scrophula attacks shall be soon mentioned.

This disease is very commonly considered as an offspring of the *lues venerea* ; and, in order to prove this, it is alledged, that it never appeared till that broke out, that the children of venereal parents are often scrophulous, and that mercury cures both. Now, I think it would be easy to shew, that the ancients have described this distemper, as well as many others, which were undoubtedly known to them. True it is, that they have not given a very distinguishing description of it ; but I own that I think, in no case were they near so accurate in that respect as the moderns. Learning, for a long tract of years, being lost in Europe, it is no wonder that we find no exact account of it in latter times, till the sixteenth century, when letters were again brought into repute. As to the second argument, that children of venereal parents are often scrophulous, I could never see any truth in it ; but I imagine the foundation is, that

that the *lues venerea* appears often under a different form in children, and may assume sometimes the appearance of our disease. The truth of the last argument I must also refuse,

The scrophulous constitution is distinguished by a smooth pellucid skin, flaccid muscles, pale or red hair, and a pale or ruddy complexion: in short, it is the same with the sanguine. I have observed that patients under this disease have generally remarkably large eyes, and the *adnata* of a very clear bright colour.

People are most liable to it from two years of age upwards, to puberty. There are some instances of its appearing both before and after this period, as in the time of menstruation in women, but they are very rare; a strong proof that it is connected with a certain time of life is, that it is often spontaneously cured at puberty. Those young persons who are most liable to it, are afterwards such as are aptest to become phthysical; and practical writers have observed, that those tubercles in the lungs, which often give rise to the phthisis in this country, are at first of the scrophulous kind. This last observation is also confirmed by this, that the head and neck being larger in children, defluxions of all kinds

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are at that time most common there, and this disease in particular; now these affections are found to seize the lungs generally betwixt puberty and the achm .

Having now found that scrophula is a disease of the lymphatic system, and peculiar to a certain period of life, we are to inquire into the particular nature of the acrimony here present.

Dr. RUSSELL, in his *Œconomia Natur *, has undertaken a very useful work, viz. to give a history of the changes that happen to the different parts of the system through the different ages of life; but, unluckily, when considering the alterations of the glands, he has neglected the conglobate or lymphatic. Indeed, what he says of any of the different stages of life, except teething and puberty, is only what has been the invention of his imagination. In infancy, the lymphatic system bears a large proportion to the other parts of the body. This proportion gradually diminishes, as we advance in years. Hence, we must naturally conclude, that it has a particular use in children. Its chief use in general seems to be to absorb the lymph, and carry it to the chyle, in order to assimilate it, or assist its assimilation.

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Our aliments, when young, are generally of the vegetable kind, which are mostly of the accessant nature, and will therefore require more pains to induce the animal quality upon them ; and this I take to be the design of having the lymphatics largest when young ; but this accessancy may so prevail, as to affect the lymphatic juice ; and Dr. Homberg finds by experiment, that acid predominates more in young than adult bodies. From this then we may conclude, with probability at least, that the scrophulous acrimony is of an acid nature ; but, without dwelling longer on this part of my subject, I shall proceed to

THE CURE OF SCROPHULA.

The method of cure in this disease, whose nature is so uncertain, must be very various ; but, internally, I think the most general remedies are of the alkaline or absorbent kind, which is very conformable to our theory. These are calcined vegetables, burnt sponge, &c. The Hepar Sulphuris only acts, I imagine, by its alkali.

Though the disease arises chiefly from acrimony, yet it may be owing in part to a

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Jaxity, which tonic medicines may remove; accordingly we find chalybeats, but, more particularly the bark, recommended much by some physicians.

Fear and awe appear also sometimes to have cured it; since it is to that that we must refer the effects of rubbing a dead man's hand, and the royal touch, which make a deep impression on children, from their solemnity, and both instances are supported by strong testimony. Acrid purgatives may be of service, by exciting the action of the lymphatic system, as in dropsies. Mineral waters of almost every kind have been recommended, and many which are so weakly impregnated as to owe all their good effects, if they had any, to water itself. Such as are impregnated with salt answer best; but indeed I have found that salt water answers better than any of them that we have in this country. Such waters, I believe, have often been thought to perform cures, when their application happened to coincide with the time of life when the disease would have gone off of itself. There are also certain times of the year, as winter or frosty weather, when scrophulous sores dry up spontaneously, to break out again when summer returns. Now these

these medicines may also deceive us by this means.

With respect to the manner of exhibiting the salt water, I would give it only in such quantity as would keep the belly open, without purging; and to obviate that thirst which attends the use of it, and prevents people often from taking it, it should be mixed, half and half, with common water, and taken by degrees.

Besides these remedies, there have several specifics been proposed, as Boyle's *Parenychia-folio rutacco*: Fuller mentions the tussilago, which I have myself found of excellent service, especially when its expressed juice is given: as it requires a long space of time, we cannot yet judge what effect it will have on our patient, who has persisted very faithfully in the use of it. I cannot here miss observing, that though there is hardly a writer who does not recommend mercury, yet I never saw it discuss even the slightest scrophulous rumours, but, on the contrary, have found it urge them to suppuration, when they would otherwise have discussed of themselves.

The Cicuta, so much recommended by the Vienna physicians, I must own, has not been very fairly tried in this country; but, however, I have reason

reason to think that much is not to be expected from it.

With respect to the external cure, extirpation, when possible, I think, should be used, according to the practice of the ancients. When this will not do, and the sore suppurates in part, I would not scruple to recommend the destruction of the part with excharotics, though this practice has been long laid aside. Formerly they used even arsenic for this purpose, but mercury would be much more proper, as the red precipitate, which I ordered for this patient, but it seemed to corrode the whole parts. *Aq. Phagedenica* :—this I also used, and with better success. There is a writer that recommends a gall bladder, put into a strong solution of salt, which is the same with the salt water that has been used; *vide* Dr. Russel, *de Uso Aq. Marinæ*, and in an epistle at the end of his *Œcon. Naturæ*.

In all manifest lymphatic tumours there is a degree of flaccidity, which may render the use of Goulard's *Aq. Veg. Min.* or our *Acet. Lithargyratum* (which is the same) very proper. It was for this reason that I ordered the solution of *sacch. saturni*, and with seeming good effect at first. Though a tumour to which it has been applied has suppurated, astringents have been found

found useful, and the *Facch. saturni* may act in that way. I knew a surgeon, of considerable practice in the country, who used a particular remedy with great success, whose principal ingredient I discovered to be alum.

On the JAUNDICE.

THIS disease has, by Sauvages (the first author who has wrote on the method of distinguishing distempers into genera and species), been, under the term *Aurigo*, extended to all the different kinds of yellowness of the skin; but that in the yellow fever of the West Indies, and what arises from the bite of the viper, are no proper instances of jaundice. In a contusion where there is an *ecchymosis*, after the redness is gone off, a yellowness appears from the extravasation of serum; but this can never be accounted an instance of jaundice. I would therefore take in another mark of this disease, viz. the whiteness of the fæces, which, joined to the yellowness of the skin, is sufficient to cause the jaundice.

That our disease arises from some imperiousness of the biliary passages, is, I think, beyond question; but it has been much questioned

tioned whether any obstruction of the cystic duct could give rise to it. For my part, when that is obstructed, while the gall bladder remains at the same time full, I cannot see why it should not arise, since here an opportunity is given to that absorption of the bile wherein the disease consists. But in such a case there will an ambiguity arise from this circumstance; that the fæces may continue yellow, from the bile being assused from the hepatic duct. It is a question that will now easily be discussed, if any obstruction of the liver itself, the passages of the bile continuing free, can produce it. We are too well satisfied, that that liquor does not exist with any of its properties in the blood before secretion, to think that its retention before that would occasion jaundice. That the contrary however was the great Boerhaave's opinion, appears from his considering this disease under the head of *Hepatitis*. After all, we must allow the obstruction of the liver itself a place among the causes of the stoppage of the biliary ducts, since it must press upon them at that time.

These causes are various, and depend, like all other obstructing causes, on the change of the fluid, or the transmitting vessels. The first most commonly takes place here, and the bile concretes.

cretes into hard masses forming biliary stones, which falling into the common or hepatic duct, stop the passage of the fluid part that succeeds, and occasion its absorption.... We may conceive this concretion to be of different degrees of consistency, from viscidity gluing up the ducts to stony hardness, forming a kind of sluice. The transmitting vessels may be changed, first by spasmodic constriction: this, till of late, has been too little attended to, and is still by some denied; but I have known the jaundice so often succeed immediately evident spasmodic diseases, and at such times yield to antispasmodics, that it does not leave the least doubt of it with me; and to what other cause shall we refer the jaundice coming on in the cold fit of an ague, or that which arises from violent passions of the mind? I find Morgagni, *De Sedibus & Causis Morborum*, is of the same opinion.

2dly, Tumours in the canals themselves may give rise to biliary obstruction; and, 3dly, a compression of them from schirrus of the neighbouring parts, as the liver itself, the pancreas, duodenum, and others apparently more remote.

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Of the CURE.

THE cure of this disease is one of the most difficult that comes under the management of the physician, as will appear from the account now given of its nature and causes; nevertheless there is none for which more cures have been proposed; from this I own I am still more inclined to reckon the cure difficult, since in any disease, when we find a few remedies successful, we generally stick by them.

In the first cause, viz. biliary, stony concretions, we have no proper solvents for them; or, if we have, they are such as cannot be introduced, as the strong mineral acids, or caustic alkalis. Then again, if tumours be the cause in the ducts, we have no access to them, and we well know how little it is in our power to remove schirrus of the neighbouring viscera. If the disorder arises from constriction, it is, indeed, far from being obstinate; but it goes off spontaneously; and in some of the other cases, we are apt to ascribe the cure to our medicines, while, in reality, it was performed by nature.

In the case of strong concretions, which is by far the most common, we must attempt to promote the transmission of the stone. This is the reason why

reason why *vomits* are used, and sometimes with great success. In the act of vomiting, the biliary vessels are in a manner emulg'd, as we see, by urging it to any length, for then the bile is thrown up by the mouth ; the reason is, that then the abdominal muscles and diaphragm concur, at the same time, to press upon the gall bladder and ducts, and squeeze out their contents. It was on this account that I ordered it for our patient Catharine Hamilton. This remedy however is to be cautiously managed, as, by urging the stone too rapidly forward, it may excite inflammation, as has been sometimes found. Another method of assisting the transmission of the stone, is by certain medicines, exciting the action of the ducts themselves to propel it. For this end, purgatives may be proper, since they bring the biliary canals into consent, by acting on the intestines ; for there is always a sympathy between parts that have a common use like them. Purgatives at the same time are useful, by preventing the costiveness which is very frequent here, and arises from that want of the proper stimulus to the intestines, which the obstruction of the bile produces.

Bile is the proper corrector of the acidity of our aliments ; it will therefore, by all means, be

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necessary

necessary to give such medicines as may supply this part of its office. Now I imagine soap is suited to answer all the three last-mentioned purposes. It is true that it is commonly given with a view to act as a solvent, but there is not the smallest proof of its having that power here ; and if it had, we could never give any quantity sufficient to act in that manner in the biliary ducts. Bitters are also useful, as they keep the belly generally open, and correct ascidity. Hence the electuary that our patient got, which, joined to the vomits, and more especially the operation of nature, has produced a cure.

Indeed she was from the beginning affected, but very slightly, as appears from there being no pain in her right hypochondre, which shews that if the disease arose from a stone, it was very small, and from the state of her urine. The urine in the jaundice is not only of a yellow colour, but it has always a very copious sediment, and the colour and sediment gradually diminish till the cure. I cannot leave this disease without mentioning that we must endeavour to obviate inflammation, which is apt to arise when the stone has moved * too fast by blood-letting, shunning vomits, and exhibiting opium,

which

* The blood is frequently inflammatory.

which, contrary to the general rule in inflammation, is proper here, and in the case of stone in the urinary passages.

ON THE DYSENTERY.

SAUVAGES has classed the Dysentery among the haemorrhagies, and separated it from the *Alvi Fluxus*. Linnæus again has departed from him here (though there are few instances where he does so), and has ranked it under the head of *Alvi Fluxus*, agreeable to the most general notion; which is, that dysentery and diarrhoea only differ in degree, and that a dysentery is only a diarrhoea gone such a length as to be attended with bloody stools, and, severe gripes: but, in contradiction to this, I have myself seen an epidemic and contagious dysentery without bloody stools, and, on the other hand sporadic diarrhoeas, arising from occasional causes, attended both with a discharge of blood, and with gripes.

Surely nobody would say, that the looseness which comes on after eating too much fruit, or some irregularity in diet, and goes off when these causes are abstained from, was the same disease with that which is so common in the

army and navy, and does so much havock among the men. The diarrhoea is sufficiently distinguished by this, that it arises from occasional causes, while the dysentery is epidemic, contagious, and attended with fever, though along with these marks it has also commonly gripes and bloody stools.

Our patient, Andrew Robertson, though he declares that at first the disease came on in the form of a diarrhoea, and arose from a draught of new ale, yet as he was living in a place where the dysentery was epidemic, and he had fever, bloody stools and gripes, when he came to us, I make no scruple to say, that he labours under the dysentery ; and here it is to be observed, that though this disease is propagated by contagion, yet it, and other such diseases, often require the concurrence of some occasional cause to make them appear, as seems to have happened in this case.

I must, with Sydenham, reckon the dysentery a *febris introversa*, or a fever with a determination to the intestines, attended with acrimony. When in summer the determination to the surface is come to the greatest height, and by that means the bile is become very acrid, if a sudden stop be put to the perspiration, there will succeed

succeed a great determination to the intestines of all the fluids that pour into them, and the acrid bile among the rest. Now, whether it be this or some matter received by infection of an acrid kind that produces the contagion in dysentery, the indications of cure will be,

1. To obviate any degree of inflammation that may be present;
2. To evacuate, or rather correct the acrimony;
3. To restore the determination to the surface;
4. To palliate the symptoms which are very troublesome, and also increase the disease. Very often there is occasion for a 5th indication, when the disease has lasted long, and reduced the patient much; viz.
5. To restore the tone of the intestines.

1. It is very evident that Boerhaave considered the dysentery as entirely inflammatory; and sometimes, perhaps, so it is, but I believe very seldom; for the fever that is present in the beginning, generally goes off: bleeding must therefore be very sparingly employed, only where the fever is very obvious, the constitution vigorous, &c.; for otherwise much harm may ensue, especially as the disease has a tendency to putrefaction. Our patient, though he had some degree

degree of thirst, and perhaps fever, yet as he was not young, nor had any urgent appearance of inflammation, he was not bled. 2. Our second indication we have in a manner subdivided into two parts; the first, viz. to evacuate the acrimony, has been generally considered as the only part of the cure; but if the acrimony is only a quantity that is received in the contagion, it must be thrown soon out again in the very course of the disease. If, on the other hand it is a leaven or ferment, it is more rational to correct it, or abstract in a manner the fuel from it, which is the best to be done by the third indication, viz. taking off the afflux of the humours from the intestines.

However, evacuants are proper for other reasons; vomits for cleansing the stomach, weakened with the disease, and of consequence over-loaded with its contents; purgatives for throwing out those hardened fæces which lurk in the cells of the colon, notwithstanding the liquid stools, and increase the disease.

They are also useful in taking off the violent spasms and gripes, which are rendered milder during the operation of a full dose of physic, as has been observed by Pringle. I began our patient with a vomit, but was resolved to avoid purgatives, that I might shew you that the cure did

did not depend on any supposed evacuation of acrimony.

To correct the acrimony would be a very chief part of the cure, if we knew exactly what kind it is of. We are only well acquainted with two kinds of acrimony, acid and alkaline. Our present acrimony we find not to be acid, from the use of acids in the cure, and from the hurt done by absorbent earths, which is partly owing to their carrying off the acid. There is more probability for thinking it of the alkaline kind, from what we have just said of the acids curing it, (whose use by the bye is improper when the stomach is weak). But supposing the acrimony to be alkaline, I am doubtful if we have any proper absorbents for alkalescency or putrescency. The celebrated Van Swieten supposes that the Armenian bole is so, but I do not find that it is endowed with such a quality: for this reason, and because there is some reason to imagine the acrimony of a nature peculiar and distinct from either of the other two, I would choose mostly to use such medicines as cover up, as it were, the sharpness. Of these, Dyner recommends the salep root, which may be useful, but is not, I think, a bit better than gum sencha or arabic, or the decoction of rice, which I ordered our patient.

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3. We now proceed to the third indication, viz. to restore the determination to the surface: this, I think, is the most important of the whole, as, by the want of this determination, the disease is begun, and also chiefly kept up by it. This is what our disease has in common with fevers; and though I said that the fever went off generally at the beginning, yet this subsists throughout the whole disease. To answer this indication, nothing is so fitted as the use of emetics, so as not to produce vomiting; hence antimony and ipecacuanha, are so commonly given. We shall have occasion soon to resume this subject more fully, when treating of fevers. Some have supposed that the antimonial preparations ought to be preferred; and perhaps there is reason to reckon them more sure in operating on the skin; yet, notwithstanding, I always use ipecacuanha, both because its dose is more certain, and its quality is always the same, and because it more certainly proves purgative in a small degree, which we have already approved of.

Sudorifics may be expected to be proper for answering this indication also, but they have been little used, and I can say nothing of them from experience. Opium, indeed, is a medicine of this class, which I always choose to give

give along with ipecacuhana, in order to determine its operation more certainly to the skin, as well as for another cause, which we shall mention soon. Opium was given to our present patient. In obstinate cases, which his was not, ipecacuhana should be exhibited three or four times a day, so as to excite nausea and sickness, without vomiting ; but indeed, though it should go sometimes that length, no bad consequence would follow. I am informed, that in the dysenteries that prevailed at the Havannah last year, the ipecacuhana was given twice a day, in such a quantity as generally to vomit without any bad consequence. The opium, however, is not to be divided into an equal number of doses, but to be given in a sufficient one at night ; for from experience I know that it has not equal effects, when divided.

4. The fourth indication we laid down, was to palliate the symptoms, which we had little occasion for in Andrew Robertson, as they were but slight ; they are chiefly gripes, tenesmus, and indurated fæces.

The first of these, viz. gripes, are not only very inconvenient of themselves, but also tend to increase the disease. They are only to be cured by opiates. Some people indeed would

R r 2 disapprove

disapprove of this medicine, because it stops the evacuation of the acrimony, and in that manner acts as an astringent would do ; but its effects in this way are very transient. Indeed, in the beginning, while there remains any fever, especially if there is reason to expect inflammations being present, I would abstain from them.

The second symptom, or *tenesmus*, must be carefully removed, for the same reason as gripes : it arises from the confinement of the acrid matter in the rectum, and is therefore best remedied by topical applications ; viz. starch, injections or mucilage of gum arabic ; but more effectually by opium, thrown in by injection, in which manner it can be given in greater quantity, without affecting the system, than when taken in by the mouth. It may even, I believe, be exhibited, while there is a small degree of fever remaining, as I have practised myself ; however we ought to be very cautious in that respect. The hardened fæces is a symptom that appears very extraordinary, where liquid stools are so common ; but that there generally is such a symptom, appears beyond question, from the evacuation of them now and then, from the common discharge of them on the use of stimulants, and from inspection of dead bodies that laboured under this disease.

disease. This is the chief indication for purgatives, which, when they cannot be conveniently thrown in at the mouth, may be given in the form of clysters. Turpentine clysters I have often found to answer this intention extremely well ; but no medicine has been so common here as rhubarb, from an imagined power, that, besides purging, it has of bracing the intestines. I will not say that this is entirely void of foundation ; but I find that Sydenham used senna in place of it ; and in some of our late campaigns, when their rhubarb was exhausted, they were obliged to use jalep, which answered equally well. For my own part, I never find occasion for any particular remedy here, as the ipecacuanha answers sufficiently well.

5. The fifth indication laid down, was to restore the tone of the intestines ; but as we had no occasion for it in the present patient, and a general discussion of it would carry me too far, it will be enough to illustrate it by our practice, in the case of M'Eldoe, of which we shall therefore proceed to give an account.

Of the Case of M'Eldoe.

This patient was at first affected with gripes, Tenesmus, and fever ; his stools were only slimy, and

and he was seized with these complaints in Nottingham, as he was passing through it on his way to Scotland. He cannot tell whether dysenteries were epidemic there at that time. As he, however, came down in company with a soldier who was not recovered from that disease, I make no scruple to consider, that he at that time had a dysentery; for I have already said, that bloody stools are not essential to it. His symptoms now arise merely from the weakened tone of the viscera, occasioned by the continuance of the flux for two months. They are sickness, especially after eating, gripes, alternate fits of costiveness and purging, frequent borborygmi. Here the Staaklian maxim is very applicable — *Spasmus gignit Atonias, et Atonia Spasmos.* The disease first has induced that *ataxia* of the stomach and intestines, to which the sickness and costiveness are owing; while, on the other hand, the gripes or spasms arise from that *ataxia*. Purging is a natural consequence of the disordered state of the alimentary canal, which necessarily produces crudity and acrimony, which in this patient seems to be of the acid kind. The first indication in his case corresponds with the fifth, laid down in the cure of the dysentery, viz. to restore the tone of the intestines.

intestines. For this purpose I ordered the bark for him ; but as his stomach was too weak for him to take it at first in substance, it was given in infusion, which I generally prefer to the decoction, because it is lighter for the stomach, and seems to attract the astringent power of medicines equally well ; and if there is any virtue in the more volatile parts of the bark, they are not so much dissipated. To prevent dissipation, indeed, I used the glass digestor, described in my chymical lecture, p. 11, on solution. Some time after, I ventured on the bark in substance ; but it disagreed so much with his stomach, that I was again obliged to lay it aside. For this indication, fresh air and gentle exercise are of the greatest consequence ; but neither of these are in our power in this place.

The second indication was to palliate the symptoms, viz. first to obviate the costiveness, which is an effect of the *atonia*, at the same time that it aggravates it, and gives occasion to the crudity ; with this view I refer laxative clysters, which, if they prove effectual, tend to weaken the canal ; secondly, to cure the acid crudity, for which purpose I gave lime-water, a medicine very generally reckoned astringent, but which to me appears to have no other power

but absorbency ; thirdly, to remove the gripes and tenesmus, which, painful in themselves, do also disturb the assimilation of the food. For this purpose opiates were given, joined to the bark, which I thought might obviate the contraindication to opium, from the costive tendency, for the bark sometimes is gently purgative. It however had not that effect here ; for which reason I was obliged to be more sparing of the opium than I otherwise intended. This patient's complaint, like all those arising from Atonia, is obstinate, and indeed this is not the most proper place for him.

OF THE VENEREAL DISEASE.

THE Venereal Disease is distinguishable into local and universal. I shall begin with the local, as it takes first place after infection ; viz. the Gonorrhœa.

OF THE GONORRHOEA VIRULENTA.

The *Gonorrhœa Virulenta* is attended with many difficulties in theory, both with regard to its

its manner of introduction into the body, and its real nature.

The first question I have not time to enter upon at present ; but with regard to these cond I must observe, that it does not arise from any ulcer in the urethra, but consists in a vitiation of the quality and an increased quantity of the mucus of the urethra. This I think evident from the two following considerations, viz.

1. That I have frequently seen a matter distil from the neck of the glands entirely similar to that which flows from the urethra, commonly without any ulceration, or even excoriation attending it. I have at present a patient, who, from a stroke on the prepuce, without any infection, has a discharge which stains his shirt in the same way as the ordinary gonorrhœal matter, but without any appearance of ulcer.

2. I am informed by Dr. Hunter (a man of great experience), that he has very often dissected subje&cts that had died while they laboured under the virulent gonorrhœa, and found the venereal matter lying in the urethra, but without the least appearance of ulcer. I find the same is observed by Morgagni, *De Sedibus et Causis Morborum*. It is true, that they both allow that ulcerations of the urethra are very common in gonorrhœa, and this I confess must

be the case from the acrimony of the matter. The arguments taken from the pain being felt in some particular place, and the chordée, are easily answered, being no proof of any thing else but inflammation, which I allow of: *vide* Morgagni. The disease, therefore, consists in a vitiation of the mucus, with an increased discharge, and an inflammation on part or the whole of the urethra.

It is evident from what we have said of the nature of gonorrhœa, that the indications of cure are, 1. To obviate inflammation; 2. To evacuate or correct the virus; 3. To prevent the discharge.

To answer the first indication, the antiphlogistic regimen is to be followed, viz. abstinence from wine and strong meat; and for the same reason exercise is to be avoided, particularly walking or riding, which are aptest to influence the parts affected here. Next venæsection is proper at first, especially in robust persons; but afterwards I always prefer topical bleeding by leeches, which I accordingly ordered more than once for our patient Donald M'Craw. Another means to obviate the inflammation is, by taking off the *ardor urinæ*. This might have been made an indication by itself; but I think it comes properly enough under this head, as the inflammation

mation gives first rise to it, though at length it is increased by it ; for the urine irritates in the inflamed part as it runs through the urethra : for this purpose great plenty of drink is of excellent service, as it dilutes the saline parts of the urine, and renders it mild. However, these saline matters even dilute, or in the smallest quantity irritate the inflamed urethra ; for which reason these medicines that cover them are to be used, viz. mucilages, of which I prefer the gum arabic to the *althea*, because we are not sure of its quality, and to the linseed, because, from its oily nature, it cannot be taken in such quantity. However, though our patient got gum arabic in large quantity, I was disappointed in its effects. The truth is, these medicines are altered by digestion as well as other *ingesta*, so that they do not return their mucilaginous nature when they get to the urethra or urinary organs ; and we can expect little advantage from them, unless they are given in greater quantities than can be assimilated ; and for this reason they often fail, where the digestive powers are strong. To ease the *ardor urinæ* nitre is very commonly given, from a notion of its cooling quality. It is indeed antiphlogistic and diuretic ; but I never saw it of use where the gum arabic had not succeeded.

Topical applications have most effect in moderating the heat of urine, viz. the injection of bland oil into the urethra, which covers it from the sharpness of the urine. However, the urethra is so often shrivelled and sunk into a narrow diameter, that it is very often difficult or impossible to push any injection beyond the point of the syringe, from which it regurgitates. Fomentations and warm bathings soften and relax the parts, but ought not to be applied before the inflammation is pretty well gone, since their warmth irritates and increases the spasm. See what was said of these in Rheumatisms. I have often seen them, when applied improperly in a gonorrhœa, or even phymosis, excite painful erections, and otherwise also raise the inflammation to a greater height. Thus have we finished all that is to be said of the first indication, which many consider as the only one necessary; but I cannot help laying down the second, since it is evident that the virus taken in cannot be evacuated by any remedies yet prescribed. True it is, that while the inflammation continues, evacuants cannot be given; and during its cure the flow from the urethra probably carries off the virus, for the most part; yet as we cannot be certain of this, recourse is, I think, to be had to mercury, the only evacuant

ant of the venereal poison. This is to be thrown into the urethra ; but in what form ?—While all the acrid preparations of mercury frightened the physicians, crude mercury was employed, rubbed with honey, and then diffused through water. This rude composition, however, was so inconvenient, that some were led to substitute calomel for the crude mercury ; but it is equally inconvenient, being as apt to run together in the urethra, insomuch that I have known it produce severe inflammation, and a stoppage of urine. To obviate this, some again diffused the calomel first in gum arabic, but this means is far from answering well either ; and the corrosive sublimate being the only mercurial preparation that dissolves in water, is alone fit for injection. It should not be used till the inflammation is pretty much abated ; and I would begin with dissolving only one grain in four ounces of water, throwing it in till it be felt to smart, but intermitting it, or alternating with the oily injection. This method never fails of removing the disease, if it is not begun too soon, as I believe I did with M'Craw. A question will naturally arise here, whether or not any internal medicines are to be used ? It has been long the practice to give purgatives, but I confess I know not of what use they are. Neutral salts, indeed, by their

their antiphlogistic power, may tend to ease the inflammation ; but cathartic salts, and they among the rest, always, during their operation, irritate the anus, which communicates the stimulus to the urethra, and thereby increases the heat of urine. This I have more than once had occasion to see, and for that reason I never use them.

With regard to the internal use of mercury in small doses, they can have no effect on any topical affection, and how absurd therefore is the common practice of giving these at night and purging them off again the next morning. On the other hand, large doses, when the symptoms are merely those of a simple gonorrhœa, without chancres, are quite unnecessary. Some people think all this is obviated by rubbing mercurial ointment on the urethra externally, a practice introduced first into Britain about thirty years ago by Douglas, but I do not find it answer ; though I believe we may naturally suppose that there is a porosity in the human body through which it may pass into the urethra, without being conveyed all round by the absorbent lymphatics ; for indeed I can see no other rational way of accounting for the quick operation of other topical applications, or even the introduction of the gonorrhœal matter. This manner however

however of using mercury I do not find, I say, to answer, and it is extremely inconvenient if the part anointed be exposed to cold.

There is still another question which will require a little discussion, and relates to the third indication we marked out. *Are astringents to be used internally or by injection?* They no doubt may answer the third indication; but then their use is of very dangerous consequence, if the virus is not entirely expelled, and to know this is extremely difficult. If the mucus discharged is pellucid and viscid, we are sure there is none of it remaining; but this is extremely rare. It is generally thought to be gone when the mucus is viscid, and become whiter than before; but I have known many instances of astringents proving hurtful in such cases; nay, I will venture to say, that even the thin discoloured matter is not always a rare sign of virus. I have known it as thin and yellow as commonly from infection, from mere intemperance in venery and living: how improper would it be, at this time, to follow the common method of drastic purges and mercury! On the whole, I think the use of astringents dangerous and uncertain. Do they, according to the received opinion, force the virus into the blood, and produce the confirmed *lues venerea*? I own I am very much inclined to doubt this, but I

am

am certain they produce schirrosities and strictures in the urethra, which very often last for life; and they also often produce swelled testicles, not as is commonly believed, by throwing the venereal matter upon them (for I cannot well conceive how it should take that course), but only by stopping the exits of the *prostates* and *vesiculae seminales*. I think this is put beyond doubt, by a case which I knew of a married man who got a gleet by too frequent coition with his wife, which nevertheless, when stopped, produced a swelled testicle. I have had so little practice with astringents, that I cannot pretend to give any choice; but I have always found the medicine which I have recommended for evacuating the virus, also answer best for stopping gleets. This is illustrated by the case of Davidson, of which we shall now take a short view.

On the Case of DAVIDSON.

DAVIDSON was infected with a gonorrhœa in May last, for which he got some medicines; however, the running lasted some months. It stopped at length however, for some weeks, and returned in September, as he says, from a sprain. How this could produce that effect I cannot perceive, and I am apt to suspect that he only

only meant to pass it entirely for a seminal weakness ; a very common deceit. He had at first, when he came into our hands, that sort of sediment in his urine which never fails for ordinary to point out a nephritic disorder, for which reason I was dubious concerning his complaints, but was willing to make a trial of the *uva ursi* ; his stomach, however, not bearing it in any quantity, and the appearance of nephritic symptoms entirely disappearing, I was confirmed in reckoning it a gleet, and resolved to use the corrosive sublimate. This had the desired effect of stopping the running ; but, from some accidental cause, it recurred, attended with some inflammation and *ardor urinæ*, which nevertheless was cured by the alternate use of the oily and sublimate injections ; so that he is now discharged quite well.

Having finished all that I intended to say, relating to local venereal diseases, I should now proceed to the universal, or *lues confirmata* ; but as this would carry me beyond the bounds that I have now left me, I shall confine myself to the consideration of those more acrid mercurial preparations, which I had a considerable hand in introducing into the practice of this house.

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I believe

I believe it is now pretty universally admitted, that the *lues venerea* can only be cured by mercury; and that it acts, not as any specific antidote, but as an evacuant of the virus. The more mild preparations, even from the timidity of regular practitioners, were not employed universally for a long time. Now these must necessarily be employed in large quantity, and mercury always from its own nature, and that of the economy respectively, when thrown in in large quantity, acts on the salivary organs, and at the same time I believe, though less sensibly, on all the excretaries besides. It is therefore undoubtedly a very certain remedy, and indeed to many the most certain remedy in a mild preparation; but it is liable to many dangers and inconveniencies in the exhibition. It is therefore no wonder if many long desired to substitute another method in place of the salivations. A great while since, the Montpelier physicians introduced what has been called the alterative method, viz. using mercurial unction, without letting it go the length of raising a salivation; this way, however, is also found to be very tedious, and even attended with considerable risk of danger. In this country the

the mercury was then proposed to be given by the mouth, till that should be affected, but without going on to a regular salivation: this method has the same inconveniences in a smaller degree; and we can easily perceive that we must suppose the mercury acts on the other excretaries as well as on the mouth, since the discharge from it would not be sufficient in this case. It was therefore greatly to be wished that another remedy would act on the perspiration, or other excretions could be fallen upon. Mercury infallibly does act on these, while it also operates on the salivary glands. Now I believe the acrid preparations act most certainly on the system in general, and therefore on the most universal excretory, the skin, when given in small quantity. Corrosive sublimate, long thought a most deleterious poison, has for these reasons been gaining ground for a great while past. It is fifteen years since a surgeon in the army informed me that he had used it for a considerable number of years with success. He gave it in substance in the form of pills, along with a small portion of aloes and a great quantity of crumbs of bread. I at that time adopted it, and gave it, not without advantage; but as it very often affected the stomach severely, I again laid it aside. After this,

Van Swieten published his solution to the world, and it was received with great readiness; but however, it had been falling again gradually, I think, into disrepute in this country, perhaps from its advantage being uncertain, which it certainly is. The common sublimate of our shops is of very different degrees of strength and goodness. Some time ago Dr. Pringle sent me two specimens of corrosive sublimate from London, one prepared at Apothecaries Hall, and the other by a private chymist; the first he found to fail very often, the other generally succeeded. On examining the composition of both, I found that that of the private chymist was considerably more acrid than the other. This confirms what we have said of the more acrid preparations of mercury. But common corrosive sublimate, even prepared like that of the private chymist, just mentioned, is liable, on standing, to have its acridity abstracted, and the mercury thrown down, in the form of a *mercurius dulcis*: this happens when it is dissolved in water, but still more so in brandy, according to Van Swieten's method. For these reasons I some years ago contrived another more acrid preparation, which was used since that time in this house. Ward's white drop, however, being made public last year, by which

which we were made acquainted with a solution of mercury in the nitrous acid, which had the same effects with those in the corrosive sublimate, and at the same time was much more concentrated than any of the above mentioned, and was not disposed to deposit the mercury—this, I say, led me to the composition of a similar preparation with the marine acid, which has now for some time been used in this house indifferently with the white drop of Ward. By the accounts of the physicians belonging to the hospital it appears that their effects seem to be much the same. Sometimes the one, and sometimes the other, produces gripes, according to the constitution of the patient.

With regard to the exhibition of both, we should at first begin with small quantities, because they are apt to produce severe gripes, and run off by stool, which defeats the intention for which they are given, viz. to act chiefly on the skin.

The dose should then be gradually increased, till it acts by sweat, urine, or insensible perspiration. When it produces sweat, its effects in curing are quickest, and more so when it increases urine, than if it only excites insensible perspiration. Indeed, when it sweats, I have always found it produce a quick and easy cure.

Opium

Opium it is necessary to give along with it, to prevent its running off by stool, and to determine its operation more surely to the skin.

I must now observe, however, that there are cases in which it will be very apt to fail, or would be improper, which are chiefly,

1. When the patient does not keep warm, but goes out of his chamber, especially in winter, though even then I have seen it succeed; but the use of it six weeks, when keeping warm within doors, will generally go farther than six months when exposed to cold.

2. I have already said, that corrosive sublimate diffuses itself over the whole system. The strong preparations we are now speaking of do so in a more remarkable degree, almost as soon as they reach the stomach; but this depends on the sensibility of the constitution, so that there are some that will not sweat with it, nor have their urine or perspiration increased by it, though it be thrown in in such quantity as to affect, and in a manner corrode the stomach. This we found to be the case with Malcolm Murdoch, on which account, after increasing the dose considerably, we were obliged to lay it aside.

3. It sometimes runs to the mouth, as the more mild preparations of mercury; but this is no objection

objection peculiar to it, unless to make it ~~act~~
even in this way more must be thrown in than
is safe, for the reason mentioned above.

Our patients who used the strong muriatic
corrosive, had nothing in their cases that re-
quired a particular discussion here. We shall
therefore proceed to another subject.

OF INTERMITTENT FEVERS.

IT is one of the greatest misfortunes of me-
dicine, that there have always been, and still sub-
sist, such disputation about the nature of the most
common disease of any ; I mean *fever*. I hope,
however, Hoffman is consulted on this subject, as
well as Staahl ; for my part, it is not in my
power to enter into the question at present.

Fever is a frequency of pulse, succeeding an
borripilatio, or symptoms analogous to that.
It is then the *borripilatio* that constitutes
the disease, or in other words the cold fit ;
and the succeeding hot fit is an effort of na-
ture to throw it off. So far all are agreed,
that the paroxysm consisting properly of three
stadia, enumerated by Boerhaave, and called by

Sydenham.

Sydenham *tempora effervationis, ebullitionis, and dispumationis*, whoever can cure or prevent the first or cold fit, cures the rest: *vide Boerhaave, Aph. 756.* Now there are two means by which this may be effected, viz. 1. What may be called the natural method, viz. assisting the hot fit by saline draughts, &c. which may tend to keep off the next paroxysm. 2. The artificial method, which consists either in raising an artificial fever before the cold fit, or by the use of antispasmodics, viz. such as are purely of that class or tonics, which prevent the tendency to spasm, or narcotics, which by weakening the sensibility keep off the cold fit.

The tonics are more commonly used than others.

And indeed the bark has almost been alone given for these hundred years. I have already hinted that tonics act by preventing spasm. But there are many who doubt of this being the effect of bark, and consider it rather as a specific to the intermittents. This has made physicians at a loss to find a proper substitute for it, though nevertheless many, for various reasons, have attempted this, reckoning its powers to be owing partly to its bitter, its astringent, and its aromatic qualities. They have combined dif-

ferent medicines, containing these qualities separately. I own, for my part, that I am little influenced by the common reasons against its use ; and yet I would wish to have a substitute for it on the following accounts.

1. Because most patients have acquired a kind of imaginary skill with regard to it, and fancying certain cases unfit for it, will not take it though recommended ever so strongly by the physician. This I have often met with ; and if, in such a case, the patient were persuaded, any accidental bad symptom would be ascribed to the bark.

2. Because there are some objections raised to it in certain circumstances, even by very judicious physicians, which I will not pretend entirely to obviate, and which must influence one in practice, lest he should be blamed by others.

3. There are some particular patients that admit of its being thrown in in considerable quantity, without its producing any effect. You will see the substitute I have ordered in Barr's case, to which, therefore, I shall proceed.

U u

Of

*Of the Case of LAURENCE BARR, labouring under
an Intermittent Fever.*

THIS patient was seized with a tertian ague about thirteen months ago, which had been removed for some time by the use of the bark, but always recurred; at length it disappeared spontaneously, when he was taking no medicines, at which time an anasarcaous swelling came on, which indeed I am apt to think was the intermittent concealed under this form, and should have been cured by the same medicines. When it appeared again, it assumed the quartan type, and was attended with affections of the breast, the very circumstance that induces physicians commonly to reject the use of the bark. But it was not this that induced me to that. I have, in this house, seen such affections, viz. cough, &c. merely a part of the cold fit, and cured by bark; neither had it any weight with me that the bark had succeeded so ill before, and that the fever now assumed the quartan type, for the first might be owing to the improper exhibition, and the other to the season. My chief reason was, that he thought himself that the bark hurt him, and probably, on that account, would not

have been induced to take it regularly. I at first ordered the *senna*, not from any experience that I have had myself of its virtue, but from the influence of the physicians of the House. But this medicine purged him so easily, that I was obliged to give it over again. I then gave him the *calamus aromaticus*, which is an astringent and bitter; but his stomach not bearing this medicine neither, I resolved to try the simplest bitter and astringent combined, viz. *gentian* and *galls*. I began with small doses, and afterwards increasing them, the fits, on the 21st and 24th of December, were rendered obscure by it, and on the 27th it made the fit intermit entirely. In order to be certain of the effect of our medicine, I left it off at this time, and the fit recurred on the 30th. It is commonly imagined, that if a given quantity of the bark is thrown in, in the interval of the fit, at whatever times, it will have the same effect; but I have the greatest reason to believe, that when given in large doses the day of the fit, it will have more effect than a much greater quantity in small doses during the interval. Thus 3*vi.* or 3*ls.* in that way, will be more advantageous than 3*i.* given in the common way. I am well informed, that in the

London Hospitals they now give 3*iii.* just before the fit (though certainly in divided doses) with great success. I resolved to try this method with our medicine, and therefore left it off till before the fit, and then gave 3*i.* of it twice or thrice. The patient, thinking himself now well, is discharged; though very probably, from his change of air, the inclemency of the season, &c. his disease may recur. The proportion of the gentian to the galls was that of three to one. We have not spoke of the medicine he got for the cold, as not connected with the present subject.

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